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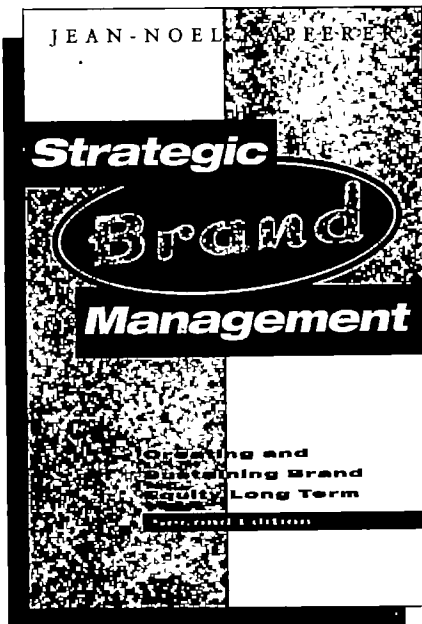
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EDITOR

David W. Stewart
Marshall School of Business
ACC 306B
University of Southern California
Los Angeles, CA 90089-0443

ASSISTANT TO THE EDITOR

Brenda Miller
Tel: (213) 740-6892
Fax: (213) 740-6297
E-mail: jmarket@bus.usc.edu

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BOOK REVIEWS

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American Marketing Association
311 S. Wacker Drive, Suite 5800
Chicago, IL 60606-2266

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JM Web site:

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Advertising Sales Manager

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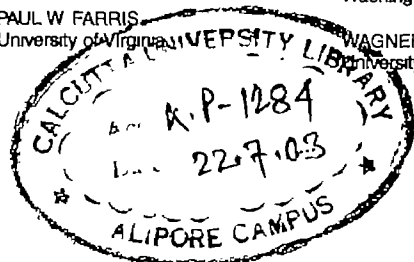
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Strategic Marketing Planning for Radically New Products

In this article, the author outlines an approach to marketing planning for radically new products, disruptive or discontinuous innovations that change the dimensionality of the consumer decision. The planning process begins with an extensive situation analysis. The factors identified in the situation analysis are woven into the economic webs surrounding the new product. The webs are mapped into Bayesian networks that can be updated as events unfold and used to simulate the impact that changes in assumptions underlying the web have on the prospects for the new product. The author illustrates this method using a historical case regarding the introduction of videotape recorders by Sony and JVC and a contemporary case of the introduction of electric vehicles. The author provides a complete, numerical example pertaining to a software development project in the Appendix.

These are times of unprecedented technological change. Stuart Kauffman (1995) equates this technological revolution to the Cambrian explosion during which three times as many phyla¹ existed as remain today. The rapid creation (and extinction) of so many fundamentally different life forms 550 million years ago provides lessons and frameworks to help view the current tumultuous times. The strict Darwinian notion that evolution progressed by the "gradual accumulation of useful variation" would have early multicellular organisms slowly diverging. Contrary to this picture, fundamentally different phyla emerged in a brief moment of geological time—a punctuated equilibrium (Eldredge and Gould 1972; Gould and Eldredge 1993). Only after the 100-million-year extinction period did evolution proceed by variations that produced new families within the surviving phyla. Vertebrates are the only current phyla that appeared after this epoch.

So, in periods of technological revolution, gross variation in the means developed to serve common goals might be expected. Such gross variation appeared in the early evolution of bicycles (Dodge 1996) and automobiles. In the early days of automobiles, for example, Kirsch (1997) points out that steam, electricity, and internal combustion engines all sought their niches before the hybrid electrified-gasoline engine became dominant. Understanding the molar differences of the early forms and recognizing that the sur-

vivors are hybrid adaptations may make some of the new possibilities more obvious. The newest proposed hybrid (one that uses gasoline to generate hydrogen to power a fuel cell) might have been less obvious if designers thought only of pure forms or incremental evolution.

How do managers achieve perspectives on the rapidly changing times that enable them to innovate? How can people plan responsibly for such innovation? These questions underlie my efforts here. It may be that, in the face of such turbulence, the most valuable strategic assets are the mental models and tools people use to think about the future (Amit and Schoemaker 1993). I describe a framework and method for planning for radically new products. I begin by defining what I mean by "radical change." Then I describe a planning process that begins with an extensive situation analysis. The situation analysis pays particular attention to environmental change that comes from political, behavioral, economic, sociological, and technological sources. These environmental forces are studied from the points of view of the company, the business ecosystem (Moore 1996) or value network (Christensen 1997), and the infrastructure. This stage produces a critical-issues grid that helps planners stay divergent enough in their thinking that the major potential threats and opportunities are more likely to be identified. The stakeholders and factors identified in the situation analysis then are woven into the economic webs surrounding the new product by asking the question, "Who or what does each factor influence?"

The influence diagrams, or webs, are the visual schemes of Bayesian networks. A Bayesian network is a directed acyclic graph in which the arcs connecting nodes reflect the conditional probabilities of outcomes, given the range of factors and assumptions considered. To move from the visual scheme to a complete Bayesian network involves a combination of knowledge engineering (i.e., a process of translating existing expertise into conditional probabilities between nodes in the network) and specification of focused research projects to develop estimates for the unknown arcs. At first the numbers can be crude, directional approximations of the underlying processes. The Bayesian nature of the network enables planners to im-

¹The taxonomic hierarchy goes kingdoms, phyla, classes, orders, families, genera, and species. Thus, 100 phyla then compared with the 32 surviving phyla indicates the huge variation generated during this period.

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prove the accuracy of the networks as their experience and expertise grows, to update information as events unfold, and to simulate the impact that changes in assumptions underlying the web have on the prospects for the new product.

What Is Radical About Radically New Products?

Many of the topics that are relevant for radically new products are also relevant for more traditional new product planning. Often planners do not bother to think through some issues because the company has done it before, the pattern of industry or ecosystem competition is set and will not change with the addition of a "new and improved" version of an existing product, or an infrastructure already is established that enables the smooth flow of commerce in this arena. In 1997, 25,261 new products were launched, according to Market Intelligence Service (see Fellman 1998). The vast majority of these are what the marketing literature calls continuous or dynamically continuous innovations (Engel, Blackwell, and Miniard 1986) or what the technology management literature calls sustaining innovations (Bower and Christensen 1995). These correspond to the gradual accumulation of useful variation expected by Darwinian evolution.

Radical innovations are similar to the new phyla created in long jumps across ecological landscapes. The species of the new phyla either find a viable niche in a new ecosystem or value network or die. Steam ships found a niche in river transport (where their competitive advantage over sailing ships was clear) more than 30 years before they ever made a successful challenge to sailing ships in oceanic transport. The ocean shipping companies listened to their best customers, who wanted more capacity at cheaper rates per ton than the steamers initially could provide. They put more sails on larger ships and ignored the coming "sea change." Similarly, transistors flourished in inexpensive portable radios before they were used to create the consumer electronics industry. The makers of large console radios listened to their best customers, who wanted more fidelity and greater range, and ignored the inferior goods that the early transistor radios represented to them. Christensen (1997) provides many examples of how outstanding companies that listen to their best customers and invest substantially in new technologies are blindsided by discontinuous innovations and ultimately lose their markets. These are examples of discontinuous or disruptive innovations that change the dimensionality of the consumer decision process and revolutionize product markets. To understand what I mean by this, radical change must be studied from a consumer's perspective.

The framework for classifying change comes from Golembiewski, Billingsley, and Yeager's (1976) work, in which they expand on the traditional understanding of change. Instead of assuming that change is a single, unified concept, Golembiewski, Billingsley, and Yeager distinguish three distinct types of change:

- **Alpha change** is a variation measured on a fixed scale. In this context, this kind of change amounts to repositioning a brand in an existing framework, such as a perceptual map. The dimensions do not change, nor is there any implied change in what people value. Rather, the attempt is to realign the brand image to capture existing values better. An advertising campaign to lend Oldsmobile a sportier image would be an example of an alpha change.

- **Beta change** is a variation measured on a changing scale. A beta change occurs when values change with a corresponding change in ideal points in a product map. For example, when children finally leave home, parents can indulge their desire for sportier cars. Without any change in brand positioning (i.e., alpha change), sportier cars are preferred because the consumer's values have changed.

- **Gamma change** is a variation that can be measured only by adding a new perceived dimension to product positioning that redefines the products and ideal points in a perceptual map of a market. If General Motors introduces an electric vehicle, consumers must consider recharging stations; rethink carpooling notions; and reset expectations about acceleration, trip distance, and reliability. These factors change the dimensions of the problem, which is the defining characteristic of gamma change.

Products are radically new from a consumer perspective when gamma change occurs. Even gamma changes come in widely varying degrees. A single dimension reflects the least change I consider radical from a consumer perspective. A technological revolution that reshapes where and how people work or how they live their family lives engages many new dimensions of experience and expression. Be it one- or many-dimensional, gamma change should cause planners to rethink what are often considered settled questions about the environment and infrastructure.

Understanding the Competitive Environment

An Open-Systems Model for Marketing and the Firm

A firm is analogous to a living system or an organism attempting to navigate its course through a mixed economy. As do all living organisms, a firm has a semipermeable boundary between itself and the competitive environment. Its receptivity to resources and resistance to threats are managed actively by the boundary.

The marketing function can be thought of as one that regulates the flow of resources (in both directions) across the organizational boundary. This broad mandate for marketing inherently emphasizes the importance of understanding the environments that surround an organization and, particularly, of anticipating radical change. The turbulence inherent in times of radical change affects the marketing function (i.e., boundary management). Emery and Trist (1965, p. 26) use open-systems theory to explain how an organization interacts with elements in a turbulent environment: "In these [turbulent environments], dynamic processes, which create significant variances for the component organizations, arise from the field itself. The 'ground' is in motion." In an environment with this much uncertainty, Emery and Trist believe that certain social values will

emerge as coping mechanisms. To succeed in this environment, an organization must form organizational matrices or "relationships between dissimilar organizations whose fates are, basically, positively correlated" (Emery and Trist 1965, p. 29). An organization must also strive for institutional success by working toward goals that fit its character and moving in a direction that converges with the interests of other organizations (e.g., suppliers or alliance partners) in the matrix. Radical change and turbulent fields go together. The direction of causality may not be clear, but some of the organizational consequences are. The emphasis in the following discussion on issues of forming interorganizational alliances, setting standards for an industry, and/or issues of product compatibility largely arises from Emery and Trist's implications for organizations whose fates are, basically, positively correlated. I observe this in the networked interorganizational structure binding high-technology firms. In the "old days," the high-tech industry was structured vertically: a single company provided hardware, peripherals, operating systems, applications, marketing, sales, training, and service. IBM did this for mainframes, and DEC did it in the minicomputer market. In the current era of explosive technological progress, there are networks of companies, each producing the component that it produces best but having its fate codependent on other firms in the web. Intel creates central processing units and motherboards; Rambus designs memory chips; Microsoft creates operating systems and software applications; Trilogy provides systems integration; Dell provides final assembly, marketing, and distribution; UPS and FedEx ship; and other firms provide service and training. This is what is meant by organizations whose fates are positively correlated. This also occurs when Procter & Gamble sits down with Unilever, Clorox, Nestlé, and Johnson & Johnson to set standards for Internet advertising (Beatty 1998).

Although Emery and Trist's (1965) notions of turbulent fields were based on general systems theory (von Bertalanffy and Rapoport 1956), cybernetics (Ashby 1956), and some organization theory of the time (Schön 1971), the same conclusions can be reached by several other theoretical paths. Transaction cost economics (Coase 1937, p. 386) asserts that a firm will tend to expand to the point at which "the costs of organizing an extra transaction within the firm becomes equal to the costs of carrying out the same transaction by means of an exchange on the open market." Therefore, the vertical dinosaurs ruled the computer landscape when the expertise was narrowly held. To get things done, IBM had to invent the hardware and software and create a manufacturing process, as well as processes for distribution, installation, and servicing. The search costs to find buyers and sellers were huge, as were information, bargaining, decision, and enforcement costs (see Robertson and Gatignon 1998; Shapiro and Varian 1999). Optimal firm size was understandably large. But to maintain its dinosaur status when expertise was more widely available, IBM had to be nearly the best of breed in all the separate functions. The downsizing and outsourcing trend of the 1980s accelerated a perhaps inevitable process by ensuring a ready supply of experts and innovators to compete for each element in the value chain. As the transaction costs drop, the optimal firm size drops. In

the digital economy, transaction costs are dropping toward zero, with startling implications for optimal firm size. It should not be surprising then that providing a whole product in high-tech arenas requires a network of original equipment manufacturers (OEMs), operating system vendors, independent hardware vendors, independent software vendors, systems integrators, distributors, trainers, and service organizations—smaller organizations whose fates are basically correlated.

A similar conclusion about the evolution of industry or ecosystem structure can be reached by considering the theory of competitive rationality (Dickson 1992), resource-advantage theory (Hunt and Morgan 1995, 1996, 1997), or the extensive work in the strategic management literature on the evolution of networks and alliances (see Gulati 1998; Madhayan, Koka, and Prescott 1998; Mitchell and Singh 1996; Ramírez 1999; Ruef 1997; Schendel 1998). Zajac (1998) notes that "networks and alliances" was the single most popular topic among the 300-plus papers submitted to the Academy of Management's Business Policy and Strategy Division in 1997. Kauffman (1988, 1995) presents an analogous theory that reflects the increasing complexity of economic systems over time. His basic image is a web of added-value transformations of products and services among economic agents, akin to a biological analog of Porter's (1985) added-value chain. Technological evolution generates new products that must mesh coherently to fulfill jointly a set of needed tasks. The networked actions afford opportunities for agents to earn a living and thus maintain demand for those very goods and services. Key questions are, (1) What is the web in any given economy? (2) What technological and economic forces govern the transformation of webs over time? and (3) Do evolutionarily stable strategies (i.e., competitive equilibria) emerge, or must companies run harder and harder just to stay in place?² The emphasis in the theory is on the coevolution of the business ecosystem (Moore 1996). The shift is highly appropriate because of the network, or web, of efforts that is needed to deliver a whole product or for typically competitive firms to confront uncertainty together (as in the case, cited previously, of consumer firms setting standards for Internet advertising). The firms must evolve together if consumers' and firms' needs are to be met.

I begin the process of building the economic web, or business ecosystem, surrounding a radically new product by focusing on the second question and articulating the broader environment in which the radically new product must operate.

²This game-theory paradigm takes its name from Lewis Carroll's Red Queen, who makes her cards run harder and harder just to stay in the same place. James Moore (1996) cites Intel as a prime example of an organization that has succeeded at playing the Red Queen Game. Geoffrey Moore (1995) credits this success as the driving mechanism behind much of the dynamics of the whole high-technology business ecosystem. The phrase that captures this competitive strategy is, "You must eat your own children or your competitor certainly will." This theme is analogous to dynamic disequilibrium theories (Dickson 1992, 1994; Hunt and Morgan 1995).

Environmental Forces

When thinking about the different environments in which a company operates, five basic environmental forces deserve attention: political, behavioral, economic, social, and technological. Each of these forces affects different aspects of the product development process. Political forces appear in form of government regulations and actions, legal precedents, or international agreements, to name a few. For example, a political issue that would affect the development of high-definition television (HDTV) is the decision by the U.S. government whether to auction off the HDTV spectrum or simply give spectra to existing broadcasters. Behavioral forces come from the consumer: how consumers traditionally interact with products and how these interactions might change with the introduction of something radically new. These issues are common in areas such as electronic banking, in which firms must overcome consumer distrust to succeed.

Economic forces stem from the consumer and the structure of markets. Any product that alters the ways in which consumers purchase goods and services inevitably will encounter economic forces. Internet airline ticket auctions provide a good example of how a new method of commerce can affect traditional guidelines of what makes a good deal. Economic forces are also in play in the negotiations over alliances, as well as issues of the scale and scope of operations.

Products that affect the way people interact with one another often encounter social forces. E-mail is a prominent example, as entirely new rules of etiquette and conduct have been invented to deal with the societal changes this product has caused.

Of these five, technological forces receive the most publicity in the media. Every day, people can read about how computers with faster processors, bigger hard drives, and more memory are enabling people to do more faster. This type of rapid progress dramatically changes consumers' expectations of what new products can do and how much consumers are willing to pay for them.

Critical-Issues Grid

The critical-issues grid provides a tool for identifying the key issues that may affect the product planning process. The grid places the five environmental forces in rows in the matrix and three points of view (company, business ecosystem, and infrastructure) as column heads. The company is part of the business ecosystem, and the ecosystem is part of the larger infrastructure. Thus, these points of view are comparable to the ground-floor view, the 1000-foot view, and the 10,000-foot view. But similar to the depth of field of different camera lenses (telephoto, portrait, and wide-angle), these different points of view bring different issues into focus. As stated in the introduction, the goal of the critical-issues grid is to keep strategic marketing planners thinking divergently enough that fundamental issues are elicited. Similar aims might be achieved by the traditional strength, weakness, opportunity, and threat analysis, by means of techniques such as STRATMESH (Dickson 1994) or discovery-driven planning (McGrath and MacMillan 1995).

The next section provides an illustration of the use of the critical-issues grid and Bayesian belief networks to illustrate the economic web in a real but historic case. The case is based on a historical analysis of the planning undertaken by Sony Corporation for the U.S. introduction of BetaMax videotape recorders (VTRs).

Planning for Sony's BetaMax

"We don't believe in market research for a new product unknown to the public ... so we never do any. We are the experts" (Lyons 1976, p. 110). Although there are good reasons to believe that traditional marketing research is less valuable for radically new products than for sustaining innovations (Christensen 1997), to a business executive of the 1990s these words sound like corporate suicide. But these are the words of Akio Morita, the legendary cofounder of Tokyo Communications, who was responsible for many successful product launches for the firm that later became the Sony Corporation. This philosophy provides insight into the history of Sony's introduction of the BetaMax VTR.

Because Morita did not believe in scientific market research, he positioned Sony's products by deciding what the best uses would be and then selling those reasons to consumers. This approach worked well in Japan for the BetaMax but was much less successful for the BetaMax introduction in the United States. Morita regarded the primary function of the product as freeing people from a preset television programming schedule. By using the BetaMax, consumers could "time shift," or watch their favorite programs at whatever time was the most convenient rather than only when the network decided to air the show. Sony also planned eventually to introduce a video camera for consumers to record home movies when VTRs formed a large enough installed base, but Morita regarded this use as secondary to time shifting. The company's biggest concern about the BetaMax introduction was whether consumers would be willing to spend the \$1,400 then necessary to purchase a VTR. Table 1 shows how the issues considered by Sony would fit into the critical-issues grid.

The blank cells in the critical-issues grid illustrate how the planners at Sony overlooked social issues and how they might affect the diffusion of the BetaMax. On closer inspection, these are crucial omissions. One of the biggest social changes brought about by the VTR was the ability of people to stay at home and watch movies together rather than to go out to a theater, which was favored by the demographic shifts as the baby boomers began having babies of their own. Sony did not consider the possible consumer demand for full-length feature films on videocassette, though its "Video Flight" equipment had been used for this purpose since the early 1960s. Instead, Sony believed that the major demand for prerecorded cassettes was in the area of historical events (e.g., Time-Life programs). When Sony chose to make its product incompatible and its tape length 60 minutes and decided not to enter into OEM agreements, it did so without considering the potentially enormous impact of movie rentals and sales. In another major oversight, Sony did not plan how to deal with copyright issues until Universal Pictures brought a lawsuit against the firm. Sony could

TABLE 1
Sony's Critical-Issues Grid for Videotape Recorders

Environments	Focus		
	Company	Business Ecosystem	Infrastructure
Political			
Behavioral	Time shift		
Economic	Can product be priced low enough?	OEM and licensing agreements	Manufacturing capacity
Social			
Technological	Picture quality and recording time	Compatibility with other VTRs	

have saved much time and money by anticipating this conflict of interests and attempting to work out an agreement with Universal and others before the issue led to lawsuits. Table 2 shows how the grid could have been filled in to increase the likelihood that Sony considered these (and other) issues.

Copyright issues dominated the political landscape. The company faced lawsuits, as did others in the industry. The ability to influence copyright legislation in the United States is an important consideration. The behavioral environment had unanswered questions about learning to use home electronics and what broadcasters could do to make taping easier (i.e., standards). The economic environment brought forward issues regarding OEM licensing agreements and their effects on overall manufacturing capacity. The biggest unexplored territory was the social environment. Would the movement toward nesting encourage industries whose in-

ventory cost structure encouraged a "one-format" standard (such as movie rentals) in a way that home movies and time shifting did not? And the technological environment raised issues pertaining not only to picture quality for the company but also to compatibility among products within the nascent industry and to plug compatibility of all the products with television sets.

When these issues are included in the grid, it is possible to move to the next step of the planning process, which is to determine how they fit together and affect one another. Sometimes storytelling, as in scenario planning, helps articulate what affects what (see Schoemaker 1995; Schwartz 1996). The web for Sony distills 13 critical issues or factors from the grid that affect Sony's ability to meet consumer needs: tape length, ease of manufacturing, production capacity, licensing agreements, OEM agreements, strategic alliances, price, quality, copyrights, demographics, time shift

TABLE 2
Improved Critical-Issues Grid for Videotape Recorders

Environments	Focus		
	Company	Business Ecosystem	Infrastructure
Political	Copyright infringement	Lawsuits brought by Universal, Disney, and so forth	Legislative copyright decisions
Behavioral	Time shift	Can people buy tapes from other companies?	Do the networks have to change anything to make taping programs possible?
Economic	Can product be priced low enough?	OEM and licensing agreements	Manufacturing capacity
Social	Will people watch movies in theaters or at home with the videocassette recorder?	Can people rent movies?	Do demographic shifts favor one use versus another (cocooning)?
Technological	Picture quality and recording time	Compatibility among manufacturers	Plug compatibility with televisions

demand, home movie demand, and video rental/sales demand. Regarding tape length, Sony initially was committed to a one-hour tape length. Although this adversely affected video rental/sales demand, it was fine for making home movies. One hour was generally enough to tape regular television shows but not specials. The technology required to make longer tapes also made manufacturing more difficult, so Sony had a manufacturing advantage with a shorter tape length but a disadvantage regarding fulfilling the customers' needs. Sony introduced its two-hour format in March 1977, six months after JVC came to market with a two-hour recording time (see Cusumano, Mylonadis, and Rosenbloom 1992). Regarding ease of manufacturing, note that the manufacturing process directly affects production capacity and price. If manufacturing is difficult, production capacity should be lower and price higher. If it is easy, larger production capacity and a less intensive process should lead to a lower price.

As shown in Figure 1, these factors weave together into an economic web. Instead of dealing with the critical factors either separately or as if these factors all interconnect, building an economic web simply asks the strategic planning team to determine what influences what. In this example, OEM and licensing agreements affect the likelihood of forming strategic alliances. Alliances affect ease of manufacturing and production capacity, as well as possibly influencing the quality of the final product. Product quality and tape length affect the difficulty of manufacturing. Alliances, production capacity, and ease of manufacturing affect price. Price, product quality, tape length, and production capacity affect the extent to which consumers' needs are met. The extent to which consumers' needs are met also is determined by the need for home movies, video rentals, and time shifting. Although demographic shifts affect all three of these needs, copyright issues only affect video rental/sales and time shifting. An analogous set of factors influences JVC's ability to meet consumer needs (not pictured). The extent to

which all the market's needs can be met by one format affects the likelihood that one format will endure.

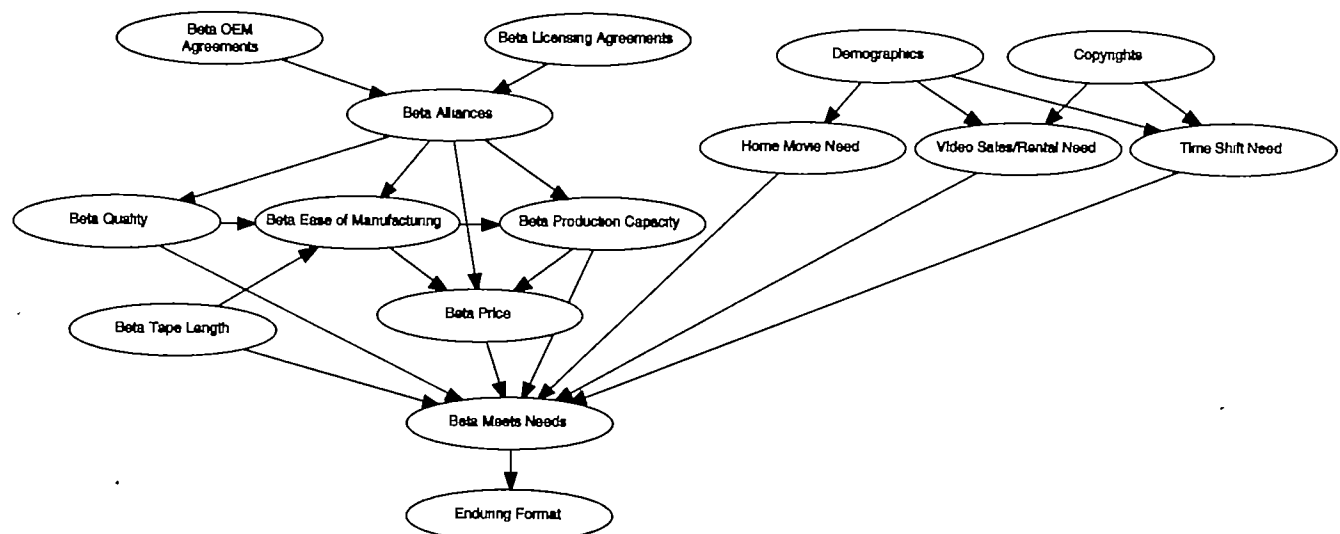
I do not wish to overstate the diagnosticity of a historical example. Demonstrating the same potential for 20–20 hindsight, however, Arthur (1988) comes to a different conclusion. He uses the Beta versus VHS format as an illustration of path dependence (i.e., how early random events can lead a random walk process to lock in a particular standard). Although his general framework provides a powerful conceptual model that drives much of the thinking about economic webs, I believe the critical-issues grid provides a framework that takes some of the randomness out of the process or at least widens the scope of potential conclusions.

Bayesian Networks

Bayesian networks were developed (Pearl 1986) in an attempt to devise a computational model of human reasoning, or of how people integrate information from multiple sources to create coherent stories or interpretations. Although Bayesian networks are inherently more accurate than people, their mandate closely parallels the roles such networks are designed to play in this planning method. From the multiplicity of issues highlighted in the critical-issues grid, the planning group is charged with creating scenarios that represent plausible futures.

The human reasoning process (and the associated storytelling process) is represented as a process that links judgments on a small number of propositions (e.g., statements or assertions) at a time, such as the likelihood that companies will be allowed to export strong encryption technology, given the current composition of Congress and the White House, or what happens to encryption export policy if the composition of Congress changes. Quantitative mapping of stories told with such elements relies on rather simple judgments. Are two propositions, x_i and x_j , dependent or independent? Does x_i influence x_j directly, or is the in-

FIGURE 1
Bayesian Network for Sony's BetaMax.



fluence indirect, through a third proposition x_k ? Pearl (1986) asserts that people tend to judge such two- or three-place relationships of conditional dependency with “clarity, conviction and consistency.” This avoids the inaccuracies in syllogistic reasoning that are well documented in the social cognition literature (Wyer and Carlston 1979). Simple conditional judgments also avoid the “conjunction fallacy” (Tversky and Kahneman 1983), in which people judge the joint occurrence of two events as more likely than that of either one alone (a clear violation of the laws of probability). The scenario is sketched into a graph in which the nodes represent certain propositions and the arcs link propositions that the scenario says are directly related. The functionality of the mapping requires consistency and completeness, linguistically and probabilistically. Linguistically, this amounts to telling stories that have a beginning, middle, and end. The probabilistic requirements are discussed next.

These types of maps are called *directed acyclic graphs* (dags). Such maps use concepts of conditional independence and graph separability to make it easier to compute the implication that a change in one state or conditional probability has for all other nodes in the graph. Two propositions, x_i and x_j , are conditionally independent, given some subset S , if S separates x_i from x_j (all paths between x_i and x_j are blocked by S). In the Sony example in Figure 1, prices are conditionally independent of licensing because all the influence of licensing on prices is reflected in the alliances node (i.e., alliances separate licensing from prices).

The utility of this framework stems from the simplicity of the computational building blocks. The basic equation for conditional probabilities says that the probability of event x_i occurring, given that event x_j has occurred ($p[x_i|x_j]$), is the ratio of the (joint) probability that both events occur ($p[x_i, x_j]$) to the (marginal) probability that event x_j occurs ($p[x_j]$):

$$(1) \quad p[x_i|x_j] = p[x_i, x_j]/p[x_j].$$

Simple algebra shows that the joint probability ($p[x_i, x_j]$) is the product of the conditional probability ($p[x_i|x_j]$) and the marginal probability ($p[x_j]$). The principle is easily extended (by the chain rule for joint distributions) to represent a complex joint probability of a series of events ($x_1, x_2, \dots, x_n$) as the product of conditional probabilities and marginal probabilities:

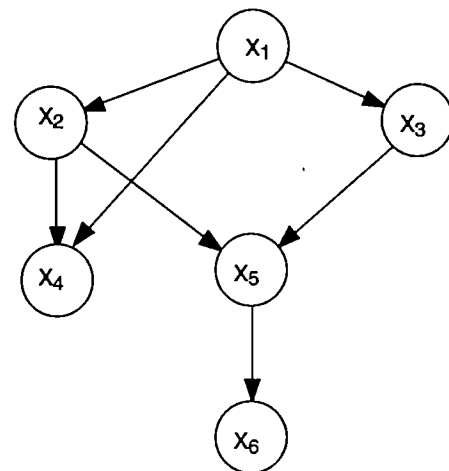
$$(2) \quad p(x_1, x_2, \dots, x_n) = p(x_n|x_{n-1} x_{n-2} \dots x_1) p(x_{n-1}|x_{n-2} x_{n-3} \dots x_1) \dots p(x_2|x_1)p(x_1).$$

With only one term on the left of the conditioning bar of each component, this formula helps ensure that a complete and consistent quantification of the events (nodes) and relations (arc) of any arbitrary scenario map can be found.

Separability helps simplify computations by asserting that if S_i is the complete set of parent nodes that have *direct* links to an event x_j , only the conditional probabilities $p[x_j|S_i]$ must be assessed rather than all the expressions on the right side of the conditioning bars in Equation 2. Pearl (1986) provides an example of a simple map involving six nodes, as is depicted in Figure 2.

Separability means the joint probability, $p(x_1 x_2 x_3 x_4 x_5 x_6)$, is found from

FIGURE 2
Hypothetical Bayesian Network



$$(3) \quad p(x_1 x_2 x_3 x_4 x_5 x_6) = p(x_6|x_5)p(x_5|x_2 x_3) p(x_4|x_2)p(x_3|x_1)p(x_2|x_1)p(x_1).$$

Thus, instead of needing to assess the awkward joint probability that a series of states probabilistically assumes (and possibly encountering the *conjunction fallacy*), only simpler conditional and marginal probabilities are required. If the experts in the planning process understand the relation, elicitation is a matter of knowledge engineering. If unknown, there is implicitly a rather well-specified research question to address. Crude directional indications can be entered and the precision can be improved as research results are found.

Implementing the Bayesian Network

For the historical case, to determine conditional probabilities for each node, I looked back to determine the external environment at the time of the BetaMax launch and Sony's internal corporate thinking. For example, in determining the probability that Sony would license its products or enter into OEM agreements, I assigned fairly low probabilities on the basis of documentation of Sony's reluctance in these areas. In determining the probabilities for environmental factors, such as various demographic scenarios or legal copyright decisions, I based my assumptions on the historical realities of the time. A demographic example is the high probability that baby boomers would want more in-home entertainment as they settled down and had children.

When the probability of each parent node was determined, I determined conditional probabilities for each offspring node depending on the outcome of the parent node. For nodes that are dependent on the outcomes of many other nodes, it is necessary to determine probabilities for many possible outcome states. In the case of home movie demand, probabilities for high versus low demand depend on price (two possible outcomes), demographics (three possible outcomes), and tape length (two possible outcomes). This creates 12 different conditional probabilities depending on the

exact scenario that occurs.³ As the number of influences on any given node increases, the number of conditional probabilities that must be evaluated grows multiplicatively. But as in the two examples that follow, by simply focusing on the major links, manageable networks result. Using general conceptual frameworks such as the three Cs (company, customers, and competitors); Porter's (1980) five forces; Dickson's (1994) five environments mental model, or STRATMESH; or the political, behavioral, economic, social, and technological environments can help structure the network into separable chunks that ease the task of eliciting conditional probabilities.

By inputting all this information into a Bayesian network, it is possible to track the events that lead to different market outcomes. The two most interesting scenarios to track are that which leads to the 50–50 split expected from the random walk that Arthur (1988) assumes and that which foresees high nesting and high demand. The random split scenario derives from assuming a high emphasis on product quality and no nesting by the baby boomers' relatively low demand for home movies, time shifting, and video sales/rentals. In these conditions (and the other default values), the Bayesian network indicates that VHS and Beta each have a 20% chance of becoming the enduring format. There is a 54% chance they both will endure and a 5% chance that neither will. Contrast this with the scenario that assumes high nesting and high demand. With these two assumptions (and the default values used in the random walk scenario), the same network gives VHS an 88% chance of becoming the enduring format and Beta less than a 2% chance. The detailed probabilities are available from the Project Action Web site (<http://164.67.164.88>). The details for a smaller numerical example pertaining to software development appear in the Appendix.

Five things are gained from this undertaking: (1) a process that makes explicit the often implicit assumptions that underlie the planning process and broadens the scope of the assumptions considered, (2) a visual overview backed by a complete quantitative statement of the likelihood of events, (3) guides to where research projects are needed to fill in the uncertainties in the planning process, (4) a method for combining subjective (engineered) expertise with more objective research results, and (5) a Bayesian network that allows for better understanding of how changes in scenario assumptions affect the likelihood of important planning events.

As time unfolds, events that underlie network issues should occur. Pending legislation on copyright is enacted. Industry standards are adopted. Speculation becomes certainty. The Bayesian nature of the network allows for easy updates of the conditional probabilities and revelation of

the implications for decision making. If someone writes a traditional planning document, it is outdated before it is read. A planning document developed from this approach is as dynamic as the turbulent times in which people live and work today. A traditional planning document is dead when the project moves into implementation. With this approach, implementation can be woven into the strategic planning document.

I have used this approach to strategic marketing planning in ten contemporary projects with teams of MBA students and am undertaking a second industry project (under a nondisclosure agreement). The MBA teams studied the potential market for electronic shopping agents and the issues surrounding the introduction of Olean™, enhanced television, DVD™ versus Divx™, smart cards (Swatch Access II Network™), Internet-based payment services, satellite-to-personal computer connectivity (Adaptec's Satellite Express™), video on demand, personal computers on a chip (National Semiconductor), and electric vehicles.

In each of these projects, the economic web fell directly out of an understanding of the stakeholders and the environmental issues that bind them together. In the case of electric vehicles, the stakeholders cluster into consumer and ecological groups, those representing interests in petroleum and electricity, political stakeholders, and car manufacturers, as is shown in Table 3. Even a high-level, critical-issues grid has multiple issues in each cell, as is shown in Table 4.

The stakeholders and issues form an 89-node Bayesian network whose aggregate structure appears in Figure 3. The network represents the decision by an existing car manufacturer to introduce an electric vehicle product. More specifically, the root node labeled "supply" asks whether the electric vehicle manufacturer will be able to produce adequate supply given four main factors: consumer demand, manufacturing investment, government requirements, and government assistance. Consumer demand is influenced by clusters of issues pertaining to education and information (public education, company marketing and promotions, and *Consumer Reports* support), the value proposition (safety, performance, aesthetics, and total cost of ownership), and social acceptance (age range acceptance, driving pattern changes, human interaction changes, and trendiness of electric vehicles). Manufacturer's investment is affected by manufacturer economics (fixed and variable costs), partnerships/alliances, and success of competitors (hydrogen fuel cells, flywheels, and internal combustion engines). Government requirements are affected by lobbying (constituents, environmental lobbying, and corporate lobbying), global regulations (emissions credits and global economics), and domestic regulation (regional and national laws). Antitrust laws, patents, and the likelihood of subsidies affect government assistance. Many of these nodes have more detailed nodes that account for the factors that underlie them. Instead of a simple list of assumptions, the Bayesian network shows the planning team's idea of how the assumptions interrelate. If the major flywheel designers quit the competition, that node could be changed to reflect the narrower competition. The planning document does not need to be discarded as out of date, and planners are not left wondering what such an event means. The

³Although Bayesian networks allow for continuous relationships between events or issues, I simplified this example to have only discrete states. Discrete states were used in the dozen examples to date and are likely to be more appropriate in the early applications of this planning framework. The Hugin Web site (<http://www.hugin.dk>) has tutorials to help users work through the numerics and free software for developing networks of less than 200 nodes. The largest network undertaken so far was substantially smaller than this limit.

TABLE 3
Stakeholders in Electric Vehicles

Stakeholder Groups	Parties	Interests
Consumers	Individual, rental, corporate fleet, public transportation	•Performance •Total cost of ownership •Convenience
Ecological	Environmental Protection Agency, Sierra Club, World Population	•Environmental protection
Petroleum	Petroleum companies, foreign governments of petroleum exporting countries	•Maintain demand for petroleum
Electric	Battery manufacturers, public utilities	•New sources of revenue •Technological gains •Efficient use of available capacity
Political	Local, national, and foreign governments	•Decrease or maintain demand for petroleum (depending on perspective) •Serve constituents
Car manufacturers	World manufacturers, new ventures	•Profitable production •Servicing consumer demand

Bayesian network provides a clear portrayal of how such an event affects the overall scheme. This largely hierarchical structure helps organize thoughts and introduces the separability that simplifies the elicitation of conditional probabilities.

One clear limitation of the Bayesian network is its inability to reflect feedback loops. These are dags and cannot feed back on themselves. Positive feedback in markets occurs when, for example, an increase in an installed base leads to an increase in the value of a software product to that base, which leads in turn to a further increase in the installed base. The problem is that Bayesian networks deal only with the first-order effect—an increase in an installed base leads to an increase in the value of a software product to that base. In a positive feedback situation, there is a second-order effect and the potential for a nonlinear evolution of the system. Representing such nonlinear evolution in Bayesian networks is a difficult and serious problem. The solution may be to construct a second-order Bayesian network model that predicts the next cycle of interaction between changing demand and changing supply. This potential approach requires much more thought and study.

Another limitation deals with the compounding of errors that can occur when multiplying probability estimates. Consider, for example, if there are just four probabilities whose true values are .5. Overestimating them each by 10% leads to a product that is overestimated by more than 46%. One way to cope with this inherent limitation is to perform computational sensitivity analysis experiments on the networks (Bankes 1993, 1994; Lempert, Schlesinger, and Bankes 1996) to find the policy variables that most influence final outcomes and then to invest the resources needed to increase the accuracy (or at least unbiasedness) of the probabilities that are most influential.⁴

⁴For more information on computation modeling for policy analysis, see <http://www.EvolvingLogic.com>.

Courtney, Kirkland, and Viguerie (1997) discuss the pitfalls of setting strategy in the face of uncertainty. They provide a useful framework of four levels of uncertainty. Level 1 is “a clear-enough future” (p. 69). They claim that standard practice at least implicitly assumes Level 1 uncertainty. If Level 1 is a reasonable assumption, this Bayesian approach to planning will work extremely well (as will many other approaches). At Level 2, “the future can be described as one of a few alternate outcomes or *discrete scenarios*” (p. 69). Here, though outcomes are not certain, probabilities for whole scenarios may exist. The Bayesian approach will work here, as will scenario planning. At Level 3 a “range of futures” exists. The “range is defined by a limited number of key variables, but ... [t]here are no natural discrete scenarios” (p. 70). With this level of uncertainty, scenario analysis begins to wane in value. Scenario generation (Schoemaker 1995; Schwartz 1996) builds general stories of possible futures. When the future unfolds in a way that does not correspond to the exact scenario assumptions, the scenario planners are left to either start over or guess at the underlying network. The Bayesian approach, however, combined with policy simulations (Bankes 1993, 1994; Lempert, Schlesinger, and Bankes 1996) still can provide valuable quantitative insights to the strategic questions. At Level 4 (“true ambiguity”), “multiple dimensions of uncertainty interact to create an environment that is virtually impossible to predict” (Courtney, Kirkland, and Viguerie 1997, pp. 70–71). Strategic decisions still must be made. A lot of strategic marketing planning begins as a vague, subjective process. The methods discussed here also can start with subjective generalities, cataloging what little is known or knowable at that point in time. When, in the early stages of strategic marketing planning, the relations are simplified and vague, the output is limited in accuracy. The resulting probabilities should be read as directional indicators of the impact of the underlying influences or critical factors. However, this approach provides a coherent underlying mechanism for becoming more precise as more is learned.

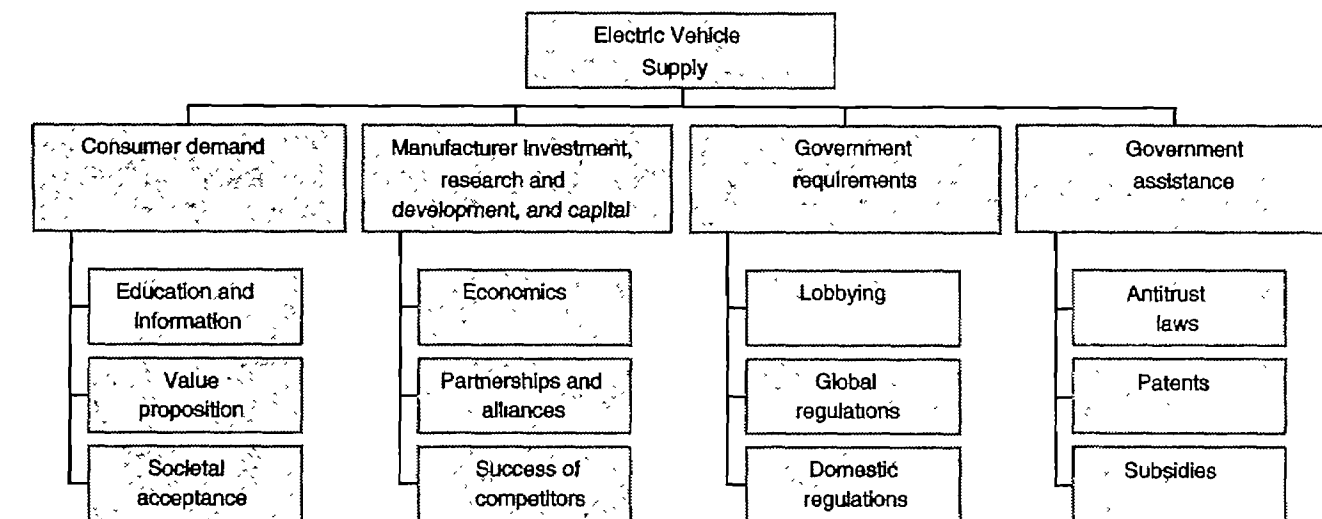
TABLE 4
Critical-Issues Grid for Electric Vehicles

	Company	Industry (Business Ecosystem/Value Networks)	Infrastructure
Political	•Department of Energy hybrid electric vehicles Propulsion Program •Antitrust •Tax incentives •Law requirement •Battery patents	•Federal Clean Air Act •New York 2% law •Utility deregulation driving 20% cost decrease in electricity •Energy Policy Act of 1992 •Clean Cities partnership •Executive Order 12844 stepping up federal fleet alternative-fuel vehicle purchases •Regulatory pressures	•Hybrid electric vehicles Propulsion Program •Federal Tier II Emissions Standards •Federal motor vehicle safety standards •Emergency response preparedness (education of groups about electric vehicle dangers) •Subsidies for refueling stations, regulatory bodies set rates for electric companies •Policies to stimulate the development and deployment of electric vehicle infrastructure support systems
Behavioral	•Will people use electric vehicles for commuting only and have a second car for longer trips? •Can cars be produced that are as safe as traditional vehicles (battery and flywheel are major elements of safety)? •Will cars perform (speed and acceleration) at a level of satisfaction to consumer? •Availability of vehicle purchasing sites and acceptability of vehicle cost/performance (refueling and maintenance) •Car design and distance of commute •What will be the daily refueling process? How will that affect lifestyles?	•Are other means of transportation as low cost and convenient? •Will industry research convince consumers of safety/reliability of electric vehicles?	•What role will stakeholders have in promoting product acceptance? •What public education will be developed to promote acceptance of products? •What will be the added value of charging stations (automatic billing, load management, vehicle security)? •How will tow trucks deal with dead battery situations? •Will refueling facilities be conveniently located—at home, office or other central point? •Will carpool lane rules be adapted to include more lenient allowance for electric vehicle commuters? Will carpooling decrease if size of cars is smaller due to lower performance motors? •Will electric vehicles change driving patterns (e.g., refueling time requirements, battery driving range)?
Economic	•At what demand will technology costs be low enough to allow greater production and reasonable pricing to consumers (break-even costs)? •Will companies offer leasing options in addition to sales (e.g., Toyota already is offering a purchase price of \$42,000 or a three-year lease price of \$457 per month)? •Existing purchase commitments by local governments and private fleet operators will encourage electric vehicle manufacturers to make products available	•What demand will be required to provide incentive for car companies to produce the electric vehicles (minimum efficient scale)? •What type of manufacturing and distribution network will exist for parts and maintenance? •Will import tariffs favor domestic sales of electric vehicles and promote higher prices? •Will utility companies offer affordable recharging (e.g., discount for off-peak hours)?	•Will incentives exist for third parties to build refueling stations? •Will recycling offer cost advantages?

TABLE 4
Continued

	Company	Industry (Business Ecosystem/Value Networks)	Infrastructure
Social	•Will people widely accept usage of electric vehicles (socially acceptable or preferred)? •Will people use electric vehicles for the same purpose as previously using other vehicles (e.g., shopping, traveling, commuting)?	•Will electric vehicle users have fewer interactions because of less carpooling (assuming smaller cars)? •Will environmental factors speed up acceptance of electric vehicles?	•Will people have greater interaction due to need to refuel at a central location? •Do demographics or living trends favor the use of electric vehicles (e.g., short commutes, concentration near cities, single-person households)? •Can people refuel at other people's houses and reroute electricity charges to themselves?
Technological	•Will adequate technology be available to provide safety (e.g., crashworthiness, containment, material structure)? •Can batteries be developed to improve available range of electric vehicles (overall vehicle efficiency, hybrid-electric vehicle technology)? •Will larger cars be made with electric motors? •Should the engine be entirely electric or a hybrid?	•Advancements in battery technology that will increase energy storage capacity are expected through the research and development efforts of the Advanced Lead-Acid Battery Consortium and the United States Advanced Battery Consortium. •Will standardization of parts and supplies occur? •Will partnerships exist between refuelers and manufacturers? •How quickly will battery technology be improved (Nickel Metal Hydride, Lithium Ion)?	•Compatibility of refueling stations (standards are evolving per agreement among major OEMs) •Will adequate battery recycling facilities exist? •Will adequate electricity supply, service, and maintenance exist? •What technological parameters (voltage/amps) are necessary at recharging stations/homes? •Can utility companies support large electric vehicle population recharging needs?

FIGURE 3
Basic Structure of the Bayesian Network for Electric Vehicles



This approach provides what is needed: a place to start, a direction for improvement, and a way to update continually a dynamic planning document. These are the basic compo-

nents needed to make strategic marketing planning a vital process that is able to confront the complexities of these turbulent times.

Appendix

The ACME Software Example

This Appendix works through a preliminary example of the Bayesian networks discussed in the article. The basic situation pertains to a fictional company, ACME Software.

Approximately six months before the scheduled release of a highly touted new software application, ACME Software is concerned about allocating sufficient resources to ensure that Release 1.0 is bug-free. The head of software development can review nightly builds, but as functionality is maturing toward the final product, new opportunities for bugs are created. If major bugs are reported, the head of development can assign additional teams to the bug-eradication effort.

An influence diagram is the visual map of the factors isolated in a critical-issues grid. For this example, the situation is depicted in Figure A1. Three kinds of nodes appear in this diagram: chance nodes, action/decision nodes, and utility nodes. The chance nodes summarize the variables or factors whose influences I am trying to track. Decision nodes capture the decisions that managers or other parties can make that affect the outcomes. Utility (or cost) nodes reflect the value of outcomes.

There are six chance nodes in this example: the actual state of the software development ("actual development progress"), with states "fair actual," "average actual," "good

actual," and "very good actual"; the actual bug-infestation report ("actual bugs"), with states "none actual," "light actual," "medium actual," and "severe actual"; the bug-infestation status after allocation of additional effort, with states that correspond to the available actions (see the following); the state of the software at scheduled release time ("state of Release 1.0"), with the states from "actual development progress" plus "rotten," "bad," and "poor"; the observation of the development progress; and the observation of bugs.

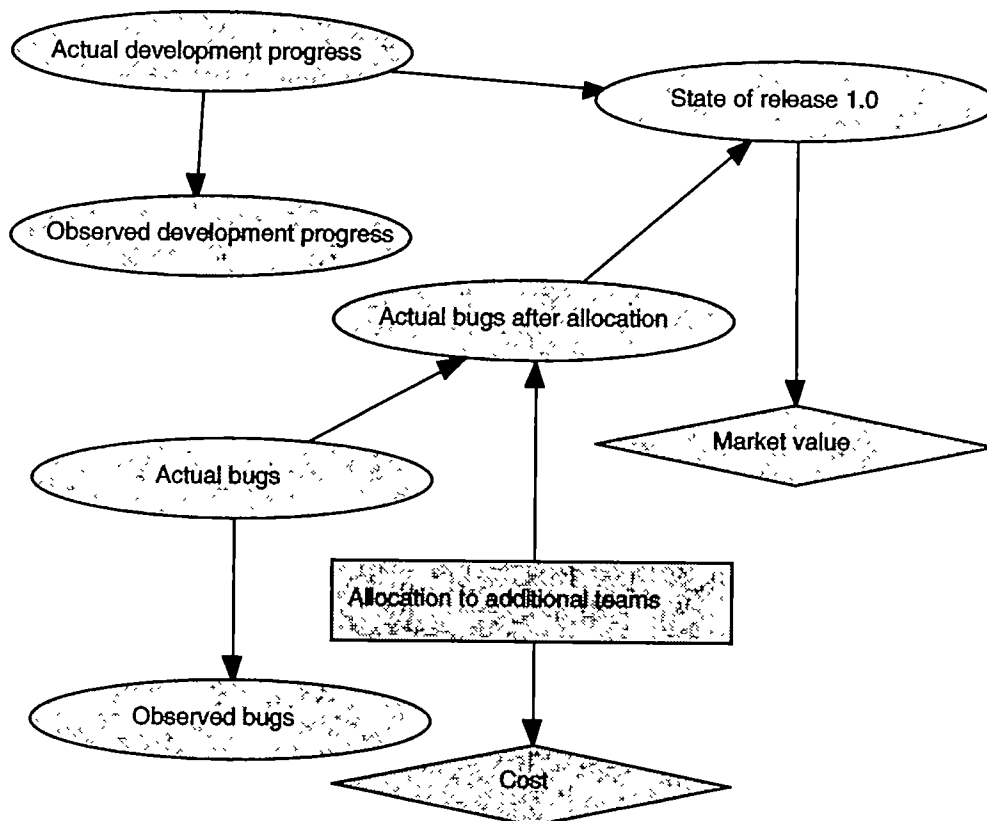
There is also an action/decision node, "allocation of additional teams," that models the decision to invest in extra development squads to deal with bug reports, with actions "no," "little," "moderate," and "heavy" investment.

Because the influence diagram has only one decision node, evidence can be entered into any chance node, and the Hugin software used to implement this example will calculate the expected utility of the decision options. That is, managers can speculate about how well they think development is proceeding and how likely bugs are and assess for those speculated conditions what the utilities are for each action they could take regarding allocation of additional resources to development.

Hugin Software Inputs

To analyze a problem such as the ACME situation, decision makers can translate the situation into the Hugin software package. As in Figure A1, multiple node shapes can exist.

FIGURE A1
ACME Software Influence Diagram



Elliptical nodes, such as "actual bugs," represent chance nodes. These nodes represent events that occur in the decision problem but have multiple possible outcomes that the decision maker cannot control directly. For example, "actual bugs" represents the actual level of bugs six months prior to the software's release. The likelihood of each state occurring is measured in terms of probability, summing to 1. If a chance node has no nodes directed into it, such as "actual bugs," it is called a "parent node," and its probabilities are based solely on each state's likelihood. For this case, the values of bugs are as follows: none actual .4, light actual .3, medium actual .2, and severe actual .1.

However, because the level of bugs observed is influenced by the actual number of bugs, the probability of each observed bug level, given the actual bug level, must be estimated. For example, the conditional probability matrix in Table A1 might be estimated (on the basis of research or prior experience).

Table A1 should be read so that the cell entry reflects the probability of observing the row condition given the column state. Given a medium level of actual bugs, there is a .1 probability of observing no bugs, a .2 probability of observing light bugs, a .5 probability of observing medium bugs, and a .2 probability of observing severe bugs. The .1 probability of observing light bugs when there are no actual bugs reflects that bugs may be observed in error or become "features" of the final release. Note that the Hugin software's use of conditional independence enables the decision maker to limit the consideration of node influences to those directly connected to a given node or parent nodes. All other information leading into the parent nodes already is reflected in the chosen probabilities.

The marginal probabilities reflecting the likelihood of the state of progress in overall software development must be estimated (on the basis of research or prior experience), as follows: fair actual .2, average actual .4, good actual .3, and very good actual .1. The conditional probabilities of observed progress, given the actual progress, also must be estimated (on the basis of research or prior experience), as in Table A2.

Rectangular nodes represent decisions that are controlled entirely by a decision maker. These decisions take place within the context of the situation. For example, the decision node "additional allocation to teams" represents the decision by ACME to increase its manpower commitments by none, little, moderate, or heavy amounts. Diamond-shaped utility nodes contain values for the utilities for each possible outcome. Therefore, decision nodes interact with uncertain chance nodes to create a level of expected utility

TABLE A1
Conditional Probabilities of Actual Bugs

	None Actual	Light Actual	Medium Actual	Severe Actual
None observed	.9	.2	.1	0
Light observed	.1	.5	.2	.1
Medium observed	0	.2	.5	.3
Severe observed	0	.1	.2	.6

given a specific decision. For the utility node "additional allocation to teams," the associated costs are estimated as follows: none 0, little -2, moderate -3, and heavy -4.

For the market value of the various outcomes, the following states of Release 1.0 are estimated: rotten -1, bad 1, poor 5, fair 8, average 10, good 12, and very good 13. To complete the example, the conditional probabilities in the final two chance nodes, "actual bugs after allocation" and "state of Release 1.0," must be estimated. The conditional probabilities in any chance node reflect the combinations of the states for all the nodes pointing directly in it. "Actual bugs after allocation" has states "none after," "light after," "medium after," and "severe after." The conditional likelihood of these states given the direct influences on them must be estimated from research or prior knowledge, as in Table A3.

The final set of conditional probabilities reflects the state of software of Release 1.0 given the actual state of progress

TABLE A2
Conditional Probabilities of Actual Development Progress

	Fair Actual	Average Actual	Good Actual	Very Good Actual
Fair observed	.8	.3	.1	0
Average observed	.15	.6	.2	.1
Good observed	.05	.1	.6	.4
Very good observed	0	0	.1	.5

TABLE A3
Conditional Probabilities of Actual Bugs with Allocation of Teams

	None Actual	Light Actual	Medium Actual	Severe Actual
No Allocation of Additional Teams				
None after	1	0	0	0
Light after	0	1	0	0
Medium after	0	0	1	0
Severe after	0	0	0	1
Little Allocation of Additional Teams				
None after	1	.8	0	0
Light after	0	.2	.8	0
Medium after	0	0	.2	.8
Severe after	0	0	0	.2
Moderate Allocation to Additional Teams				
None after	1	1	.8	0
Light after	0	0	.2	.8
Moderate after	0	0	0	.2
Severe after	0	0	0	0
Heavy Allocation to Additional Teams				
None after	1	1	1	.8
Light after	0	0	0	.2
Moderate after	0	0	0	0
Severe after	0	0	0	0

in development and the actual state of bugs after additional allocation of development teams. These appear in Table A4.

These conditional probabilities, costs, and market values reflect essentially the default conditions (i.e., the best baseline guess of what is going to happen). If the network is compiled (using the "Compile" button) at this point, the marginal probabilities associated with each state of the chance nodes and the utilities associated with each possible action under the default conditions are revealed. The probabilities and utilities appear in Table A5. Note that the maximum utility (8.20) is associated with the decision not to allocate addition teams to the development effort. Much of the value of this approach lies in the ability to update understanding as new information becomes available. Say fair development progress is observed but so is a severe bug level. This evidence can be entered easily into the probability table and propagated through the network (using the "Sum Propagate" button). The probabilities and utilities appear in Table A6. Note that the maximum utility is much lower (4.81) and is associated with the decision to

make a heavy allocation of additional development teams. In a similar fashion, the consequences of observing any conditions can be propagated through the network to help indicate the best actions to take and the likely market consequence.

This example can be extended by adding a later decision point on delaying the release date by one or more months.

TABLE A4
Conditional Probabilities of Bugs with Actual Allocation of Teams

	Actual Fair	Actual Average	Actual Good	Actual Very Good
No Bugs After Additional Allocation				
Rotten	0	0	0	0
Bad	.05	0	0	0
Poor	.1	.05	0	0
Fair	.7	.1	.05	0
Average	.1	.7	.1	.1
Good	.05	.1	.7	.2
Very good	0	.05	.15	.7
Light Bugs After Additional Allocation				
Rotten	.05	0	0	0
Bad	.1	0	0	0
Poor	.7	.05	.05	0
Fair	.1	.1	.1	.05
Average	.05	.7	.7	.15
Good	0	.1	.15	.7
Very good	0	.05	0	.1
Moderate Bugs After Additional Allocation				
Rotten	.15	.05	0	0
Bad	.7	.1	.05	0
Poor	.1	.7	.1	.05
Fair	.05	.1	.7	.1
Average	0	.05	.1	.7
Good	0	0	.5	.15
Very good	0	0	0	0
Severe Bugs After Additional Allocation				
Rotten	.9	.15	.05	0
Bad	.1	.7	.1	.05
Poor	0	.1	.7	.1
Fair	0	.05	.1	.7
Average	0	0	.05	.1
Good	0	0	0	.05
Very good	0	0	0	0

TABLE A5
Default Probabilities and Utilities

Actual Bugs	
	.4 None Actual
	.3 Light Actual
	.2 Medium Actual
	.1 Severe Actual
Actual Bugs After Allocation	
	.72 None After
	.16 Light After
	.08 Medium After
	.03 Severe After
Actual Development Progress	
	.2 Fair Actual
	.4 Average Actual
	.3 Good Actual
	.1 Very Good Actual
Observed Development Progress	
	.31 Fair Observed
	.34 Average Observed
	.27 Good Observed
	.08 Very Good Observed
Observed Bugs	
	.44 No Observed
	.24 Light Observed
	.19 Medium Observed
	.13 Severe Observed
State of Release 1.0	
	.01 Rotten
	.04 Bad
	.09 Poor
	.18 Fair
	.34 Average
	.23 Good
	.10 Very Good
Utility of Allocation	
	8.20 No Allocation
	7.29 Little Allocation
	7.04 Moderate Allocation
	6.26 Heavy Allocation

The Project Action Web site (<http://164.67.164.88>) discusses this extension and provides the actual networks used in this Appendix.

TABLE A6
Probabilities and Utilities Assuming Fair
Observed Progress and Severe Observed Bugs

Actual Bugs	
	.23 None Actual
	.31 Light Actual
	.46 Medium Actual
	.46 Severe Actual
Actual Bugs After Allocation	
	.39 None After
	.26 Light After
	.21 Medium After
	.14 Severe After
Actual Development Progress	
	.52 Fair Actual
	.39 Average Actual
	.10 Good Actual
	Very Good Actual
Observed Development Progress	
	*1 Fair Observed
	Average Observed
	Good Observed
	Very Good Observed
Observed Bugs	
	No Observed
	Light Observed
	Medium Observed
	*1 Severe Observed
State of Release 1.0	
	.10 Rotten
	.15 Bad
	.21 Poor
	.22 Fair
	.23 Average
	.06 Good
	.02 Very Good
Utility of Allocation	
	3.00 No Allocation
	3.30 Little Allocation
	4.72 Moderate Allocation
	4.81 Heavy Allocation

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Strategic Foretelling: Communication-Based Antecedents of a Firm's Propensity to Preannounce

The authors examine preannouncements as strategic marketing communications aimed at influencing the perceptions and attitudes of industry stakeholders. The growth of the Internet points to the expanded importance of preannouncements. With an investigation of 265 chief executive officers (CEOs) and presidents from manufacturers of new products, the authors examine the effects of three firm-specific factors (first-mover predisposition, firm information interactivity, and competitive equity building) and one environmental construct (industry dynamism) on a firm's propensity to preannounce its future intended actions. The results indicate that competitive equity building, defined as a firm's tendency to pursue a high-profile leadership position within its industry, is the main driver of a firm's propensity to preannounce. Future directions for research include the development of a normative preannouncement framework and investigation of the role of preannouncements within the context of CEO marketing activities.

Preannouncements are a type of signal that Porter (1980, p.75) defines as "any action by a firm that provides a direct or indirect indication of its intentions, motives, goals, or internal situation." Preannouncements differ from other signal types, in that they are a firm's deliberate communication regarding its future planned actions (Eliashberg and Robertson 1988). Individual studies often have specific perspectives of preannouncement, such as a communication that precedes a new product introduction (Chaney, Devinney, and Winer 1991; Eddy and Saunders 1980; Eliashberg and Robertson 1988; Lane and Jacobsen 1995; Lilly and Walters 1997; Rabino and Moore 1989; Robertson, Eliashberg, and Rymon 1995), price reduction (Heil and Langvardt 1994; Heil and Walters 1993), or dividend policy change (Downes and Heinkel 1982). This perspective may restrict understanding of preannouncements to only discrete, single events that are highly situation specific.

Our discussions with chief executive officers (CEOs) and chief financial officers, through case studies and in-depth interviews, and an exploratory content analysis of 75 news items indicate that preannouncements can also focus on, for example, changes in licensing arrangements (Apple to change clone licensing deals), joint ventures, strategic alliances and acquisitions (Mattel and Intel to codevelop a new generation of smart toys), or distribution practices (NBC to seek help from affiliates to pay for *ER*). They can

be posted by news wire services as press releases on the firm's Web site or company intranet or through management speeches, interviews, or conferences. In short, preannouncements can focus on virtually any future action and exhibit a wide range of formats, lengths, and specificity.

For the firm, preannouncements are highly appealing tools for strategic marketing communications. They are a low-cost means to inform customers, employees, competitors, channel members, investors, industry experts, and observers of the firm's future intentions. Notions about the future drive both competitor and buyer behavior in many product categories, especially durables and, most significantly, high-technology goods. However, no broad investigation has examined a firm's propensity to preannounce future actions across a wide range of content despite recent emphasis on communication as an enabler of many stakeholder relationships (e.g., customers, employees, channel members, investors; Duncan and Moriarty 1998).

The goal of this study is to model factors that would motivate a firm's propensity to preannounce. We do not limit our examination to specific preannouncement types (e.g., new product and pricing preannouncements); instead, our focus is the firm's use of preannouncements in a more generalized sense, namely, its preannouncement propensity, which encompasses a broad range of content. We investigate three firm-specific constructs and one environmental construct that may create a compelling need for the firm to foretell its future intentions regarding a wide range of possible actions to target audiences. The three firm-specific constructs, which focus on the possible influences of organizational tendencies and strategy selection on the propensity to preannounce, are (1) the firm's innovative posture in the form of first-mover predisposition; (2) firm information interactivity, which taps the

Roger Calantone is the Eli Broad Professor of Marketing & Product Innovation, Michigan State University. Kim Schatzel is at the Department of Marketing, Boston College. Both authors contributed equally to the manuscript and are listed alphabetically. The authors thank Cornelia Droge and an anonymous *JM* reviewer for comments on a previous draft of this article.

firm's behavioral bias regarding information exchange with its industry environment; and (3) the firm's pursuit of a high-profile leadership position within its industry, which we term "competitive equity building." We also investigate the mediated relationships among these three constructs and a firm's propensity to preannounce. Finally, dynamism in the industry, defined as frequent changes in marketing, products, or production, is modeled as an indirect antecedent that influences the firm's strategy selection and organizational tendencies. Our basic hypothesis is that the more changeable the industry environment, the more the firm will select an innovative strategy, emphasize strategic communications, seek to attain a high-profile industry leadership position, and preannounce its future planned actions in an attempt to reduce uncertainty in its own favor.

After briefly discussing the use of preannouncements as strategic marketing communication tools, we develop the eight hypotheses of our model. Next, we test the model using structural equation modeling, present the results, and discuss the study's contributions. We conclude the article by exploring future research directions, including a possible new framework that characterizes preannouncements, considers preannouncement campaigns, and examines the use of preannouncements as a means by which CEOs and other top executives directly participate in the marketing of their firms.

The Use of Preannouncements

The main objective of any strategic communication is to inform or influence the target audience in some way, and timeliness and believability are major influencers in achieving this goal. Preannouncements, with few if any production requirements, are relatively fast, inexpensive to produce, and more believable than advertising. They often are issued and approved by senior management and contain quotes or interviews from these executives. Thus, they may be assumed to reflect the mind-set of the firm's leading strategists. Preannouncements are often subject to public disclosure requirements and legal scrutiny, which further enhance their perceived accuracy and believability.

The growth of the Internet as an information search tool for both consumers and businesses has provided low-cost access to preannouncements, which once were available only through more costly routes, such as clipping services or personal search of multiple media sources. A recent study by the American Management Association states that approximately 53% of business executives routinely use the Internet, averaging four hours weekly, to examine news items and press releases regarding their company, competitors, suppliers, distributors, customers, and other industry information (Davidson 1998). In addition, our discussions with various firms' management indicate the growing use of company intranets, a firm's confidential Web site for authorized personnel, to distribute news items to their employees, investors, business press, and channel members. In short, the channels for distribution of information are changing rapidly, and preannouncements afford firms the means to participate in this developing informational forum.

Preannouncements have risks. They can reveal a firm's intentions to competitors, thus enabling competitors to initiate a retaliatory response (e.g., accelerate the development of a comparable new product). Product line cannibalization can also result if buyers delay purchases of existing product lines in anticipation of the future new product. Risks to the firm's reputation also exist if the preannounced action goes unfulfilled. Preannouncements also can be construed as unfair competitive actions or antitrust violations by government regulatory and judicial agencies.

However, preannouncements provide firms with many benefits. They can reduce uncertainty; affect market influencers (e.g., industry experts and observers); enable channel members, buyers, and internal sales forces to plan; build support for a planned action both internally and externally; and effectively position general opinion regarding the company. Factors that motivate a firm's propensity to preannounce are the focus of this study.

The Conceptual Model

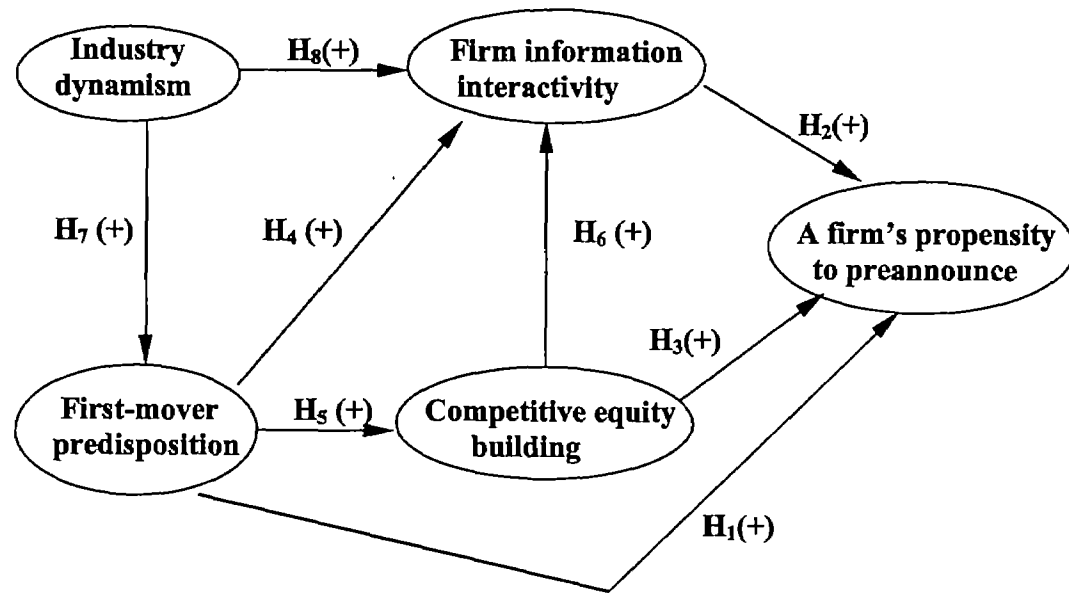
In Figure 1, we present the conceptual model and accompanying hypotheses. To organize the presentation of hypotheses better, we divide the overall discussion of the model into three sections. We first discuss the direct antecedent effects of first-mover predisposition, firm information interactivity, and competitive equity building on a firm's propensity to preannounce (H_1 , H_2 , H_3). In the second section, we examine the mediated relationships among the three organizational constructs (H_4 , H_5 , H_6) and, in the third section, investigate the indirect antecedent effects of industry dynamism (H_7 , H_8).

The Direct Effects of Three Firm-Specific Antecedents: First-Mover Predisposition, Firm Information Interactivity, and Competitive Equity Building

First-mover predisposition. First-mover predisposition affects a firm's propensity to preannounce by way of two mechanisms. First, low risk aversion characterizes first movers (Lieberman and Montgomery 1988; Miller and Friesen 1982). In their seminal article, Eliashberg and Robertson (1988) propose that low risk aversion motivates a firm's likelihood to preannounce new products. Their hypothesis is based on the argument that preannouncers stress the benefits of preannouncing (e.g., image enhancement, distribution advantage, demand stimulation), in contrast to nonpreannouncers, which focus on the inherent risks. Thus, selection of a first-mover strategy would motivate the firm's propensity to preannounce, and the effect would not be limited to new product preannouncements but would extend to other future intended actions for which preannouncing benefits could be realized (e.g., future changes in supply and distribution partnerships, plans for strategic alliance development).

Second, Heil and Robertson (1991) propose that the threat of competitive retaliation makes firms reluctant to preannounce because of competitive cuing risks. However, first movers adopt innovative market strategies and develop new products, technologies, business practices, and markets

FIGURE 1
Statement of Hypothesized Relationships



that provide pioneering advantages and preclude a direct competitive response (Kerin, Varadarajan, and Peterson 1992; Lieberman and Montgomery 1988). Thus, a first mover would be less subject to competitive cuing risks and discount its preannouncement effects.

H₁: First-mover predisposition is related positively to a firm's propensity to preannounce.

Firm information interactivity. We define *firm information interactivity* as the formal information exchange practices of a firm with a broad number of industry participants that are frequent, involved, and bidirectional in nature. This definition incorporates previous research that indicates that firms adopt proactive modes of communication, such that management influences the bounding of information exchange activities (El Sawy and Pauchant 1988), as well as the notion that the information exchange is interactive; that is, the firm communicatively responds to the informational needs it identifies in its internal and external environment (e.g., new product plans directed at the investment community, future entry into new geographic market segments in response to distributor queries, plans for new distribution partnerships aimed at sales personnel). A highly interactive firm expends resources (managerial and financial) on developing and maintaining communication linkages with its environment, and such investments indicate that management views responsive information exchange activities and communication networks as valuable and beneficial to firm performance.

Preannouncements provide firms with a powerful communication tool to respond inexpensively and quickly to the informational needs of a wide range of target audiences. Press releases, management conferences, and interviews regarding future actions can be tailored specifically to meet the informational needs of various stakeholder groups, such

as investors, buyers, suppliers, and distributors. A recent industry example is the Daimler-Chrysler merger. In this case, both firms engaged in extensive preannouncement activity in advance of the planned October 1998 merger date, effectively and favorably positioning the move in the minds of stockholders, industry experts, dealers, and employees. For example, during the week after the initial merger preannouncement, a video was shown to all Chrysler employees in which Chrysler Chairman and CEO Robert Eaton explained various details regarding the merger and specifically responded to employee concerns regarding future plans for layoffs and changes to wage and benefit practices. Similar videos, targeted at dealers and supplier audiences, were developed as well.

H₂: Firm information interactivity is related positively to a firm's propensity to preannounce.

Competitive equity building. Firms often try to build a favorable firm reputation among industry constituents, such as buyers, distributors, investors, industry observers, and the business and trade media (Rumelt 1987; Spence 1974; Weigelt and Camerer 1988). Firms attempting to position themselves as high-profile industry leaders engage in a strategic marketing activity, which we term competitive equity building. In building competitive equity among a broad target audience, firms often articulate a vision that includes their internal model of future actions, industry trends, and market practices. The purpose is to resolve uncertainty, shape industry standards, and achieve a favorable industry reputation. Competitive equity building is particularly important in an incomplete information environment, such as that in which industry standards are not yet established or future industry states are not predicted easily.

In building competitive equity, the firm attempts to position itself and its products as industry leaders or standards

in the minds of multiple industry groups, such as investors, channel members, industry influencers, and buyers. Firms with high competitive equity are often bellwethers of their industry (e.g., Microsoft, Intel, and Cisco in the computer industry). Competitive equity building goes beyond traditional brand equity building and differs from it in at least six ways.

First, the target audience is broader and more varied. Whereas brand equity involves just the individual consumer, competitive equity building also involves suppliers, distributors, ancillary support firms (e.g., software developers in the computer industry), industry influencers, the media (both trade- and business-related), and the investment community.

Second, competitive equity building attempts to influence the development of the perceptual market structure, whereas brand equity building focuses on the creation of positive mental associations between the brand and already established perceptual market structures.

Third, the target influence event relevant to brand equity focuses on predisposing consumer action, whereas for competitive equity, it focuses on achieving the status of an industry standard in the minds of the broader audience (e.g., buyers, suppliers, distributors, investors).

Fourth, the time frame for brand equity is relatively near term (purchase), whereas competitive equity building has no such time frame limitation.

Fifth, the message content differs. Advertising and promotion, most frequently used in building brand equity, focus on communicating simple brand associations and, unlike competitive equity-building communications, have relatively little cognitive information.

Sixth, different media channels are used. Traditional advertising cannot fully communicate the concepts associated with competitive equity building. It focuses on the single buyer as the decision maker, and there are practical limitations on how much complex cognitive content advertising can transmit. Firms attempting to build competitive equity would welcome coverage by the press and seek out more robust venues (e.g., media interviews, trade conferences) from which to communicate to their multiple constituents.

Competitive equity building, with its focus on achieving a high-profile favorable industry reputation, should increase a firm's propensity to preannounce. Preannouncements are a way for firms to secure top-of-mind, or at least share-of-mind, awareness across a broad group of target audiences, as well as a means to communicate relatively complex information from the executive suite in a timely and efficient manner. Previous research has indicated that a firm's desire to enhance its image is related positively to new product preannouncements (Eliashberg and Robertson 1988; Lilly and Walters 1997; Rabino and Moore 1989). Not restricting itself solely to new products, a competitive equity-building firm could preview future actions that would affect its position favorably and increase its overall awareness within the industry.

H₃: Competitive equity building is related positively to a firm's propensity to preannounce.

The Mediated Antecedent Effects of Two Organizational Constructs: First-Mover Predisposition and Competitive Equity Building

First-mover predisposition. Within the context of our model, in addition to its direct effect, we propose that first-mover predisposition positively influences a firm's propensity to preannounce through two indirect paths. In the first path, first-mover predisposition indirectly motivates a firm's propensity to preannounce through its positive effect on firm information interactivity.

Hambrick (1982) proposes that an organization's range and frequency of environmental scanning is influenced by its competitive strategy. Pfeffer and Salanick (1978) also argue that managers' perceived needs for information influence their search efforts. Selection of a first-mover strategy would motivate management to emphasize the development of innovative products and the identification of new market opportunities. Usually, the change that provides these market gaps already has occurred or is under way (Drucker 1985). Thus, because of their strategic orientation, first movers necessarily will cast a wide "communication net" to gather and disseminate extensive information with a broad base of industry constituents. First movers, as informationally interactive actors, would nurture the development of an expansive communication network and value information exchange as a means to stay in touch with their constituents and identify changing market and customer trends within their industry.

H₄: First-mover predisposition indirectly influences a firm's propensity to preannounce through its positive effect on firm information interactivity.

Another stream of research on first movers examines how information influences consumer response to pioneering brands (Schmalensee 1982; Yao 1988). Carpenter and Nakamoto (1989, 1990) propose that first movers can substantially alter the buyer's perceptual structure of product considerations that is used within the context of the purchase decision (Kerin, Varadarajan, and Peterson 1992; Robinson 1988; Robinson and Fornell 1985). In that way, the first mover may become the prototypical market standard (Carpenter and Nakamoto 1989; Kerin, Varadarajan, and Peterson 1992). Lieberman and Montgomery (1988) argue that first movers can influence the way that market uncertainty is resolved and may be able to set industry standards in their favor. For innovative products, referents are lacking, salience is low, buyers often are confused about product attributes and how to rank them, and the purchase implications are frequently highly ambiguous and unpredictable. Consequently, buyers often evaluate products on the basis of the seller's industry reputation: Is the firm the recognized industry leader (Bharadwaj, Varadarajan, and Fahy 1993; Kreps and Wilson 1982; Weigelt and Camerer 1988)? Reputational effects also extend beyond the consumer domain. A favorable industry reputation enables the firm to attenuate the perceived risk associated with the pioneering product in the minds of potential suppliers, distributors, channel members, employees, investors, and industry influencers.

However, most previous research does not investigate the means by which first movers attempt to achieve this positional advantage and largely ignores target audiences (e.g., channel members, investors) other than buyers. We propose competitive equity building as a means by which first movers pursue a favorable reputation and status as an industry standard. It is part of the necessary activity identified by Wind and Mahajan (1987) for creating a receptive and supportive environment for new and innovative products among a broad base of internal and external stakeholders to ensure successful product development and adoption.

H₅: First-mover predisposition indirectly influences a firm's propensity to preannounce through its positive effect on competitive equity building.

Competitive equity building. Competitive equity building, in addition to its direct effect, motivates a firm's propensity to preannounce through its positive relationship with firm information interactivity. Preference formation by consumers generally is considered a process of trial and retri- al, often for an extended period, and the reconciliation of outcomes with advertising messages (Carpenter and Nakamoto 1989, 1990; Deighton 1984). This process requires the vigilant and constant monitoring of consumer preferences to evaluate the success of the firm's marketing plan and rapid adjustment of its components (e.g., product, pricing, advertising) when incongruities are identified.

Preference formation related to competitive equity building goes beyond product consumption trials by consumers. It involves a broad array of industry constituents and complex product vision and reputational positioning by the competitive equity-building firm and its competitors. Preference formation at the industry level entails complex dimensions in terms of attributes (e.g., product development plans, future financial viability, management succession plans), buyers (e.g., distributors, suppliers, investors, ancillary support firms, industry experts, trade and business press), and many interactions among these industry constituent groups. For example, "buy" recommendations by securities analysts can position a firm as an up-and-coming industry leader and a company to "do business with" in the minds of current and potential channel members. The scope, scale, and dynamic nature of industry-level preference formation implies that a competitive equity-building firm will establish a highly interactive communication network to monitor and respond, in a timely and effective manner, to a broad range of industry constituents.

H₆: Competitive equity building indirectly influences a firm's propensity to preannounce through its positive effect on firm information interactivity.

The Indirect Antecedent Effect of Industry Dynamism

Within the context of our model, the environmental construct, industry dynamism, acts as an indirect antecedent to a firm's propensity to preannounce through its effects on first-mover predisposition, as well as on firm information interactivity. Innovation, which is at the heart of first-mover

behavior, involves the search for and exploitation of change. Adopting an open systems perspective, we regard organizations as adapting to environmental change (Fennell and Alexander 1987; Pfeffer and Salancik 1978). Such changes (e.g., technology shifts and new customer needs) give firms the opportunity to be first movers (Kerin, Varadarajan, and Peterson 1992; Lieberman and Montgomery 1988).

Dynamic industry environments are characterized by frequent changes in marketing practices, products and services, technologies, and customer needs (Miller and Friesen 1982). This is not to say that first-mover behavior is absent in less dynamic or mature markets, but it is not as common. The turbulent industry conditions associated with dynamic environments provide firms with market gaps to exploit through innovation and thus positively influence the adoption of first-mover strategies by firms.

H₇: Industry dynamism indirectly influences a firm's propensity to preannounce through its positive effect on first-mover predisposition.

Previous research indicates that industry dynamism is a major factor in firm communication practices (Achrol and Stern 1988; Bourgeois and Eisenhardt 1988; Brown and Utterback 1985; Eisenhardt 1989). Dynamic industry environments motivate the firm to communicate; that is, as environmental change becomes more frequent and complex, information exchange between the firm and the outside world increases (Brown and Utterback 1985). We propose that industry dynamism will affect the frequency and scope of outbound information flows (e.g., to buyers, suppliers, and investors). That is, as environmental change becomes more frequent and complex, the firm's industry constituents will seek more information from the firm (e.g., distributors will want confirmation of capacity constraints, investors will want updates regarding financial performance expectations). In addition, dynamic environments will motivate the boundary-spanning communication activities of the firm, positively influencing its scope, scale, and frequency (Bourgeois and Eisenhardt 1988; El Sawy and Pauchant 1988; Gannon, Smith, and Grimm 1992). In short, the firm will experience an increased demand for information from its industry constituents and increased needs for its own informational supply; dynamic environments motivate the firm to be informationally interactive.

H₈: Industry dynamism indirectly influences a firm's propensity to preannounce through its positive effect on firm information interactivity.

Method

Unit of Analysis

A key informant approach was used to collect data for this analysis. Three considerations motivated this decision. First, because of the strategic nature of the model's constructs, the informants selected were presidents, CEOs, or chairpersons of their respective firms. By definition, an informant's role is to report on organizational processes, events, or outcomes that are aggregate in nature, and thus informants should be

sampled according to expertise (McKendall and Wagner 1997). Accordingly, the informants sampled were heavily involved in the strategy formation process of their firms, often were the source or sanction for preannouncements, and would be thoroughly cognizant of industry contextual issues. Second, the use of senior-level management as key informants is particularly critical when examining a firm's activities or orientation regarding the boundary-spanning activities that were central to our research hypotheses (Penning 1984). Third, because of the sensitive nature of the information provided in survey responses, a single key informant affords the advantage of anonymity, which therefore provides the respondent with a scenario of reduced risk and increases the likelihood of his or her candid response (Kohli 1989). Regarding self-report bias, previous empirical research has largely concluded that the areas of organizational culture and structure are relatively free of covariate inflation effects (Crampton and Wagner 1994).

Sampling Frame and Method

The sampling frame consisted of high-level executives of private- and public-sector U.S.-based firms in the computer software (standard industrial classification [SIC] code 7372), computer peripheral (SIC codes 3572, 3575, and 3577), original equipment manufacturer (OEM) automotive component (SIC code 3714), and machine tool (SIC codes 3542, 3545, and 3541) industries. Firms in these industry groups are categorized as manufacturers of their respective products and engage in new product development, technology innovation, or both. The executives targeted in these firms held the position of president, chairperson, or CEO. In addition, because our intended research focus was on mid-size and larger companies, any firms with fewer than 200 employees were excluded from the sample.

On the basis of these industry and position selection criteria, a total of 2481 executives and their associated firms were selected randomly from a national mailing list. Of the identified companies, 252 were computer software producers, 355 were computer peripheral manufacturers, 928 were OEM automotive suppliers, and 946 were machine tool suppliers. Of the 2481 surveys initially mailed, a total of 622 were returned marked "moved/not forwardable," "forwarding order expired," or "person no longer at company." This reduced the actual sample frame to 1859 companies.

We attempted to enhance response rate using several methods. First, the survey packet contained a personalized cover letter that introduced the study, its potential value, and the importance of the executive's participation. Second, we offered respondents who participated a copy of the survey results and research conclusions. Third, a follow-up card was mailed ten days after the initial mailing, reminding the executives of our request for their participation. This follow-up card again highlighted the relevance of the study to the executives and offered the survey results. We also included the name and telephone number of a contact person from whom they could receive a replacement survey if it was needed. Throughout the process, we assured participating executives of confidentiality.

Of these executives, 265 (a response rate of 14.3%) responded to the survey. It is important to note that such a re-

sponse rate is realistic when we consider that the targeted respondent is a high-level executive (e.g., president, CEO), often under significant time constraints, and that the strategic focus of the survey would result in responses often considered sensitive and confidential. Both these factors would produce a downward bias to the response rate.

Measurement

All the constructs were measured using multi-item scales. The scales and their Cronbach's alpha reliabilities are provided in Table 1.

A firm's propensity to preannounce. A seven-item scale was used to measure this construct. On the questionnaire, the concept of preannouncement was defined clearly, with illustrative examples provided. The seven items describe a firm's tendency to preannounce future intended actions related to new product development, channel relationships, product line management, and organizational structure, specifically, (1) the development of a new product or service, (2) the cancellation of a new product or service, (3) the discontinuance of a current product or service, (4) the development of new supply or distribution partnerships, (5) the discontinuance of a current supply or distribution partnership, (6) the discontinuance of a joint venture or strategic alliance, and (7) the closure or sale of a product facility or operating division.

First-mover predisposition. The first-mover predisposition scale describes the strategic posture of a firm and measures the degree to which a firm initiates competitive situations and is an early market entrant. The three-item scale was adapted from Covin and Slevin (1989).

Firm information interactivity. The firm information interactivity construct describes how frequent and interactive the information exchange is between the firm and other industry participants. The four-item scale measures the firm's involvement and participation in industry information events (e.g., trade shows, technical conferences); company scanning activities regarding current and future market needs; and the value a firm places on the flow of information among the company, its employees, customers, and other industry participants. The four items measuring this construct were developed using previous communication and scanning literature (e.g., Miller and Friesen 1982; Roberts and O'Reilly 1974).

Competitive equity building. The competitive equity building scale describes the degree to which a firm values and seeks a high-profile leadership position within its industry. The three-item scale measures the firm's pursuit of a significant public position as an industry leader through its extensive participation in industry forums and solicitation of media coverage. The three items were developed after extensive review of the first-mover, signaling, and reputation literature (e.g., Lieberman and Montgomery 1988; Weigelt and Camerer 1988).

Industry dynamism. The industry dynamism scale describes the degree and frequency of change within an industry as related to marketing practices, products/services offered, and industry production methods. The four items measuring dynamism were adapted from Miller and Friesen (1982).

TABLE 1
Construct Measures and Reliabilities Based on CFA

Construct	Measures	Standardized Parameter*	Cronbach's Alpha
Industry Dynamism			.76
DYN1	Changes in marketing practices	.618	
DYN2	Product obsolescence rates	.703	
DYN3	Predictability of buyer demands and preferences	.474	
DYN4	Changes in production methods	.771	
Firm Information Interactivity			.74
INF1	Sponsor participates in trade shows and technical conferences	.483	
INF2	Gathering of customer opinions regarding product/service needs	.717	
INF3	Sharing of technical innovations and research with other industry participants	.713	
INF4	Regular and frequent information flow between firm and other industry participants is valued	.698	
First-Mover Predisposition			.76
FMO1	Initiates competitive actions	.740	
FMO2	First to introduce products, services, and so forth	.855	
FMO3	Typically adopts an aggressive competitive posture	.449	
Competitive Equity Building			.84
EQU1	Seeks a significant public profile	.897	
EQU2	Seeks role of industry leader	.901	
EQU3	Encourages media coverage	.531	
Firm's Propensity to Preannounce			.82
PTP1	Preannounce the development of a new product/service	.781	
PTP2	Preannounce the cancellation of a new product/service introduction	.681	
PTP3	Preannounce the discontinuance of a current product or service	.597	
PTP4	Preannounce the development of new supply or distribution partnerships	.771	
PTP5	Preannounce the discontinuance of a current supply or distribution partnership	.685	
PTP6	Preannounce the discontinuance of a joint venture or strategic alliance	.743	
PTP7	Preannounce closure or sale of a product facility/division	.494	

*Tests of significance on raw parameters showed all were significant at $p < .05$.

Results

Confirmatory Factor Analysis of the Measurement Model

The EQS 3.0 (Byrne 1994) software was used to perform a confirmatory factor analysis (CFA). The overall fit of the 21-item, five-construct CFA analysis was reasonably good. Measures of overall fit included the comparative fit index (CFI) = .989; normed fit index (NFI) = .976; nonnormed fit index (NNFI) = .987; no standardized residuals greater than the absolute value of 3; and a chi-squared of 323.563, 179 degrees of freedom (df). As evidence of convergent validity, all items loaded on their prespecified constructs and were significant (t-values between 5.392 and 13.530; see Table 1 for standardized parameters; Chin 1998; Fornell and Lar-

cker 1981). For establishing discriminant validity, results from LaGrange Multiplier (LM) tests indicated no significant cross-loadings for measurement items with nonhypothesized constructs. Therefore, the measurement model was supported.

Structural Model

After determining that the proposed measurement model was consistent with the data, we next tested the structural model presented in Figure 1 using EQS 3.0 (Byrne 1994). A second-stage EQS model was tested using the covariance matrix of the five latent constructs (PHI) (Anderson and Gerbing 1988). Examination of overall fit measures indicates a good fit of the model to the data (CFI = .999; NFI = 1.001; NNFI = 1.000; and chi-squared of 1.554, 2 df).

In Table 2, we show the standardized parameters and *t*-values for the model. Regarding direct antecedent effects on a firm's propensity to preannounce, both firm information interactivity (H_2) and competitive equity building (H_3) had positive effects, thus in support of these hypothesized relations. However, our results do not support the proposed positive relation between first-mover predisposition and a firm's propensity to preannounce (H_1). The empirical results indicate that a negative relation exists between first-mover predisposition and a firm's propensity to preannounce.

Examining the proposed mediated relations, our results indicate that, as proposed, first-mover predisposition is related positively to both firm information interactivity (H_4) and competitive equity building (H_5). The hypothesized positive relation between competitive equity building and firm information interactivity (H_6) also was supported.

Finally, the indirect antecedent industry dynamism had a positive relation to both first-mover predisposition (H_7) and firm information interactivity (H_8), thus in support of our hypothesized effects.

Discussion of the Study's Contributions

Four major contributions emerge from our study. For the first, the study proposes an initial foundation for examining preannouncements as strategic marketing communication tools. Our perspective suggests that preannouncements may possess a scope and scale of content and target audience that extend beyond the buyer and competitor domains that have been the primary focus of previous research. Prior to this study, preannouncement research has largely focused on preannouncements of a specific type (e.g., new products and pricing). We highlight the use of preannouncements by firms across a range of future actions to establish a favorable industry reputation; to position general opinion effectively regarding future actions; and to communicate strategically

in dynamic industry settings to reduce uncertainty, often in the preannouncer's favor. Rapidly emerging information technologies, such as the Internet, provide buyers, channel members, investors, employees, and industry influencers low-cost access to preannouncements, which thus establishes a formidable informational forum through which firms can communicate their future actions to a broad base of industry constituents in an efficient, credible, and timely manner.

Regarding the second contribution, previous research has largely focused on economic factors (e.g., buyer switching costs) that foster a firm's propensity to preannounce and has largely ignored possible motivators related to a firm's emphasis on communication and reputation building, as well as its strategy selection. We propose the construct firm information interactivity as a means to explore the effect of a firm's communication orientation and practices on its propensity to preannounce and find that a firm's posture as informationally interactive is a positive motivator.

Previous research proposes that frequent communication among channel members reduces conflict, which leads to greater trust and commitment and ultimately improved relationships. However, the primary focus of the literature has been on routinized communication among channel members (Li and Dant 1997; Mohr and Nevin 1990). Preannouncements, as strategic communication tools, can inform channel members about future actions and thereby go beyond routine information sharing, enable the firm to respond to queries regarding the firm's future actions, and reduce uncertainty surrounding the channel relation. In addition, could a firm's information interactivity with investors, industry influencers (e.g., trade and business press), and buyers have similar consequences on those relations? That is, does information exchange have a positive effect on relational ties beyond the domain of channel dyads? Preannouncements may play a vital role in developing effective relations with a wider group of target audiences than has

TABLE 2
Tests of Hypothesized Relationships

Hypothesis Description	Standardized Parameter Estimate	<i>t</i> -values	Conclusion
H_1 : First-mover predisposition is related positively to a firm's propensity to preannounce	-.338	-4.790*	H_1 not supported
H_2 : Firm information interactivity is related positively to a firm's propensity to preannounce	.391	5.507*	H_2 supported
H_3 : Competitive equity building is related positively to a firm's propensity to preannounce	.276	3.827*	H_3 supported
H_4 : First-mover predisposition is related positively to firm information interactivity	.212	3.232*	H_4 supported
H_5 : First-mover predisposition is related positively to competitive equity building	.494	8.439*	H_5 supported
H_6 : Competitive equity building is related positively to firm information interactivity	.369	3.585*	H_6 supported
H_7 : Industry dynamism retaliation is related positively to first-mover predisposition	.348	5.515*	H_7 supported
H_8 : Industry dynamism retaliation is related positively to firm information interactivity supported	.207	6.369*	H_8 supported

*Significant at $p < .05$.

been investigated previously in the literature. This question is particularly relevant because of the rapid development of new information technologies (e.g., Internet) and their growing use by business managers.

In our model, the main driver (see Figure 2) of a firm's propensity to preannounce is its pursuit of a high-profile leadership position within its industry, which we have termed competitive equity building. Thus, statements of future actions, primarily issued, controlled, and driven by executive management, are largely affected by management's emphasis on reputation building. Recent research has emphasized reputation's role as an intangible resource in business strategy (Bharadwaj, Varadarajan, and Fahy 1993; Hall 1993). In a national study of CEOs, executives rated company reputation higher than employee know-how, culture, and organizational networks with respect to the contribution it makes to business success (Hall 1993). As with the building of brand equity, competitive equity is a resource that must be nurtured and managed proactively to achieve the status of a strategic asset. Similar to advertising's major role in building brand equity, preannouncements could be a key force in achieving competitive equity.

The findings regarding competitive equity building and firm information interactivity as motivators and our discussions with business managers suggest that preannouncements may service two objectives for firms. Proactive preannouncements, in which a firm initiates foretelling various aspects of its strategic plan (e.g., future new product or joint-venture actions) because of its emphasis on competitive equity building, may be directed at influencing the opinions and actions of industry constituents (e.g., buyers, employees, channel members, investors). In addition, firms may issue reactive preannouncements to acknowledge industry queries stemming from rumors or uncertainty (e.g., rumors of new product launch delays or discontinuance of existing product lines). In this case, an informationally in-

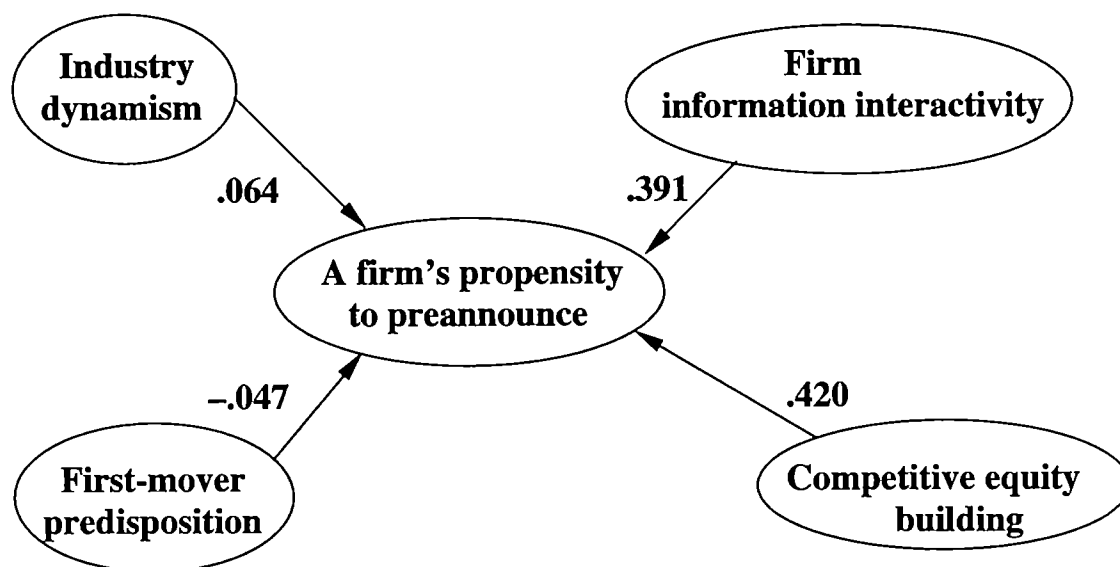
teractive firm would be responsive to such queries or concerns, and its propensity to preannounce the subject action would be influenced positively.

However, we find that, in contrast to our initial hypothesis, first-mover predisposition has a negative relationship with a firm's propensity to preannounce. The effect can be explained best if we consider two influences. First, concerns about competitive retaliation could negatively affect the first mover's propensity to preannounce planned actions (e.g., new product introduction, price cuts, market expansion, joint ventures) because of concerns that a competitor would make use of the information to strike either in retaliation or preemptively (Eliashberg and Robertson 1988). Thus, first movers would be more likely to use extreme secrecy in planning any move. Second, competitor retaliation risks could decrease the planned action's likelihood of fulfillment, thus negatively affecting the first mover's reputation (Kreps and Wilson 1982). Although first movers tend to take risks, they may want to protect their reputation by not going out on a limb, which thus negatively affects their propensity to preannounce.

However, these arguments do not explain adequately why many pioneering firms make use of preannouncements (e.g., Windows 95 by Microsoft; computers priced less than \$1,000 by Compaq). Our examination of the mediated relations among the direct organizational antecedents and a firm's propensity to preannounce furnishes some needed insights and provides the third contribution of our study.

We find a positive relation between first-mover predisposition and competitive equity building. Firms attempt to achieve first-mover advantage through two main mechanisms: (1) the accumulation of scarce resources (e.g., raw materials, proprietary technologies and patents, exclusive distribution channels; Lieberman and Montgomery 1988) and (2) influencing consumer preference formation, primarily through the use of informational strategies (Carpenter and Nakamoto 1989). Competitive equity building provides

FIGURE 2
Total Effects of a Construct on a Firm's Propensity to Preannounce



the first mover with the ability to influence preference formation through two methods. First, a favorable innovation reputation is developed by the firm. Previous research has indicated that Japanese firms place their greatest focus on favorable innovation reputation because it is viewed as critical for providing new product credibility both at the buyer level and throughout the marketplace chain (Aaker 1996). Second, competitive equity building enables the firm to influence uncertainty resolution by various market participants (e.g., buyers, suppliers, distributors, ancillary network support groups) and effect the development of industry standards in their favor (Lieberman and Montgomery 1988). Thus, first movers seeking pioneering advantage through competitive equity building, as opposed to scarce resource strategies, will have a propensity to preannounce.

Studies on new products indicate extremely low success rates and little improvement despite extensive research efforts focusing on new product development and advances in marketing research methods (Urban and Hauser 1993; Wind and Mahajan 1997). Markets without leaders lack foundations around which buyers and other industry participants can coalesce. "Leaderless" markets have no points of reference (e.g., standards, architecture, vision) for understanding the long-term implications of management decisions and therefore are slow to adopt new products and technologies (Moore 1995). Research on competitive equity building, its use by first movers to achieve industry leader status and influence standards development, and preannouncements' role in this process provides several new avenues for further investigation of new product success and sustainable first-mover advantage.

We also find that firm information activity is related positively to both competitive equity building and first-mover predisposition. Competitive equity building directly influences a firm's propensity to preannounce, as well as its tendency to be informationally interactive. This finding suggests that competitive equity building motivates a firm to seek a highly involved bidirectional information exchange with its industry constituents. Such firms are motivated to stay in close touch with their industry constituents, using communication tools to monitor closely constituents' needs and responding to queries with preannouncements. Similarly, our findings indicate that first-mover predisposition motivates a firm's information interactivity. This information exchange may be an attempt by first movers to reduce the uncertainty of industry constituents, which is a critical concern of first movers. With the rapid evolution and declining costs of interactive communication technologies (e.g., commercial Web sites, listservers), the concept of information flows (i.e., interactive or bidirectional exchange) rather than information harvest (i.e., inbound, unidirectional, or noninteractive exchange) is an interesting avenue for further study.

The fourth and final contribution of the study is our examination of the environmental construct industry dynamism as an indirect antecedent of a firm's propensity to preannounce. Our findings indicate that industry dynamism influences a firm's propensity to preannounce through its positive relationships with both first-mover predisposition

and firm information interactivity. Industry dynamism influences first-mover strategy selection through two mechanisms. First, the dynamic environment presents firms with many market opportunities to exploit through innovation. Second, the frequency and magnitude of discontinuities that result from such factors as technological advances, regulatory change, and competitor actions create disequilibrium market conditions that make optimization strategies less effective. Thus, a dynamic industry induces firms to adopt the innovative, risk-taking market strategies that characterize first movers and, through motivating that strategy selection, indirectly fosters a firm's propensity to preannounce.

If an industry is in a near constant state of flux, how do firms determine what products to introduce and what markets to enter? Recently, researchers (Wind and Mahajan 1997) have raised concerns about the efficacy of conventional new product forecasting techniques for highly dynamic business, market, and organizational environments. The techniques rely on a static or semistatic market perspective, which largely ignores the rapid changes in critical factors (e.g., technologies, buyer and competitor behavior). Some researchers believe that boundary-spanning activities can link organizations to one another, as well as buffer them from environmental disturbances (Fennell and Alexander 1987). Our results indicate that dynamic environments motivate firms to communicate interactively. Dynamic environments may introduce a high degree of noise to the industry environment; thus, firms are motivated to seek highly involved bidirectional information exchange with their industry constituents, which allows for more frequent communication as well as opportunities for feedback and information reconciliation among the participants. Thus, a dynamic industry state fosters information interactivity and indirectly motivates a firm's propensity to preannounce.

Future Research Directions

In addition to the possible avenues for further research explicated in the discussion section, the study's results and our continuing discussions with business managers indicate that the scope, scale, and complexity of the preannouncement phenomenon may have been underestimated in previous research. In response, we offer a possible reconceptualization of preannouncement and a new framework as "food for thought" for future researchers.

Preannouncements have been defined as a firm's deliberate communications regarding future actions (Eliashberg and Robertson 1988) and, as previously discussed, have been limited largely to future marketing actions such as new product introductions and pricing changes. However, some intended actions may not be categorized so readily as typical marketing practices (such as Microsoft's preannouncement that it intends to collaborate with Cisco and Intel on multimedia standards). Also, firms may communicate perspectives about the future that do not specify an intended action (e.g., Lear Seating projects that 25% of automobiles will have side deployment airbags by 2005) but reveal much about the firm's internal stance regarding future industry conditions and thus provide insights into its strategy. In

short, should preannouncements be restricted to communications regarding future actions, or should we, as researchers, broaden our definition and include a firm's deliberate communications regarding its perspectives about future industry states?

The evolution of preannouncement's current definition stems from its roots in the signaling literature and its game-theoretic perspective (Eliashberg and Robertson 1988; Heil and Langvardt 1994; Heil and Robertson 1991; Heil and Walters 1993; Moore 1992). This view focuses on the actions and counteractions of the players, largely reduces the preannouncement decision to a risk-reward analysis, ignores contextual as well as firm-specific factors that may motivate preannouncement, and does not take into account the targeting of multiple and diverse audiences (e.g., investors, channel members, industry influencers, buyers, competitors). Within this context, preannouncement research has largely focused on the action itself and deterred our understanding of preannouncement as a strategic marketing communication tool that firms use to foretell their strategic futures. For example, firms communicate, in addition to future actions, their visions regarding distribution practices (America Online predicts online consumer purchases to triple by 1999) and the viability of new technologies (Intel questions network computer usage projections). Similar to future action preannouncements, such comments provide insight into the firm's strategy and influence the attitudes and actions of the various targeted audiences. As a starting point in this debate, we ask that future prean-

nouncement researchers consider the following rendering of Eliashberg and Robertson's (1988) definition of a preannouncement. The reconceptualization is intended to broaden our perspective of preannouncements and refocus attention on its communicative and futuristic aspects:

Preannouncement is a formal and deliberate communication by a firm regarding its future planned actions or perspectives regarding future industry trends or practices. The preannouncement can be directed at one or more industry constituents, such as buyers, channels members, employees, investors, industry influencers, and government agencies, both current and prospective.

In addition to a possible reconceptualization, the study's findings and continuing managerial interviews highlight three attributes of preannouncements, other than timing (see Lilly and Walters 1997), that previously have not been explicated in the literature (see Table 3). We offer this framework, incorporating the reconceptualized preannouncement definition, as a form of propositional inventory for additional research.

The first attribute is specificity. At the low end of the specificity continuum, firm preannouncements provide somewhat vague evidence of management's perspective on future market conditions and trends or their intended future actions (e.g., future expected use of magnesium casting in small displacement engines by Ford's executive engineering staff). Preannouncements also can possess high specificity, in that comprehensive details are provided regarding a specific future marketing action (e.g., release date, features, and pricing for a new car model).

TABLE 3
Key Attributes of Preannouncement

Attribute	Description	Parameters	Examples
1. Timing	How far in advance of targeted time frame the firm is preannouncing	Varies from years (high) to days (low) in advance	Intel's projected home personal computer usage in the year 2005 (early); IBM's announcement of price cut in the next fiscal quarter (late).
2. Specificity	Degree of message content specificity and detail	Varies from vague and generalized (low) to highly detailed and specific (high) content	Whirlpool's expected consolidation of various product lines within the next few years (low); Ford unveils its 1999 Lincoln Continental at Geneva Auto Show (high).
3. Communication channel	Degree of control the firm has over the message content, format, and distribution	Varies from low control (indirect) to high control (direct) by the firm	Scott McNeally (CEO of Sun Microsystems) is interviewed on CNBC (indirect); America Online begins a prelaunch advertising campaign for its new 3.5 software (high).
4. Target audience	Number and variety of audiences targeted by the message	Varies from highly focused and exclusive (narrow) to more traditional with many mediums (wide)	Bill Gates addresses VIPs at his Technology Conference (narrow); Compaq advertises its forthcoming personal computer (wide)

The second attribute of preannouncements pertains to the means or channel of the message communication. One end of this continuum is anchored by indirect communication channels, which are characterized by the company's lower degree of control over message distribution, content, and format (e.g., media interviews by company executives). Firms preannouncing through direct channels would possess a higher degree of control over the communication of the message and often would make use of traditional marketing communications tools such as advertising to deliver the message (e.g., Windows 95 prelaunch advertising campaign).

The third attribute of preannouncements is the targeted audience. Previous research has indicated that preannouncements can be directed at one or more of the constituents of the firm's market environment, including employees, investors, buyers, channel participants, and other industry observers or experts (Chaney, Devinney, and Winer 1991; Eliashberg and Robertson 1988; Heil and Langvardt 1994; Heil and Robertson 1991; Lilly and Walters 1997). Preannouncements that possess some exclusivity of audience focus we term "narrow band" preannouncements. An example of such a preannouncement would be management conferences with key investor community analysts. A firm preannouncement that is declared to ensure wide and nonexclusive distribution (e.g., new product prelaunch advertising) we term "wide band" preannouncement.

As we have pointed out, previous research has conceptualized preannouncements as discrete, single events rather than as a campaign of related topic messages issued by the firm. We have observed, through our discussions with executives, that firms often engage in preannouncement campaigns; that is, a series of preannouncements are issued over time regarding the firm's vision of a future industry trend or intended action. The individual preannouncements, constituting the overall campaign, could vary according to the four preannouncement attributes previously specified (see Table 3). For example, firms often migrate, over time, from conditions of low preannouncement specificity (e.g., broad description of product attributes, credibility linkages, laundry lists of possible actions) toward more specific messages (e.g., detailed listing of product features, distribution channels, prototype display). In addition, the intensity of the preannouncement campaign itself could vary from conditions of low intensity (i.e., low frequency and greater temporal spacing between individual preannouncements) to high intensity (i.e., high frequency and smaller temporal spacing). Thus, firms seeking to influence a critical mass of opinions leaders within a short time frame might engage in a highly intense preannouncement campaign.

Previous research has largely focused on top management team effects from an organizational perspective, such as a firm's adoption of a market orientation (Jaworski and Kohli 1993) and commitment to new products (Ancona and Caldwell 1990, 1992; Hise et al. 1990; Keller 1986). This perspective primarily has investigated the role of top management team members as organizational entities, focused internally, that motivate the firm's

adoption of a marketing posture or its success in new product development.

However, industry anecdotal evidence indicates that top management (e.g., Bill Gates of Microsoft, Sam Walton of Wal-Mart, Andy Groves of Intel, Ted Turner of Time Warner, Jeff Bezos of Amazon) often serves as marketing "missionaries" of the firm's strategy and tactics to employees, as well as to a broad base of industry constituents (e.g., buyers, channel participants, investors, industry influencers and experts). The CEOs, such as those listed, and their top management teams emphasize their "personal" role as boundary spanners and actively attempt to win support for their firms' strategies and tactics, converting naysayers and seeking endorsement from various industry constituents. As we discussed, top management is often both the source and the sanction of preannouncements; thus, the examination of preannouncements as a vehicle for top management communication and missionary activities, as well as their ability to provide insights into the minds of a firm's leading strategists, could extend our understanding of top management's role in the development and execution of firm marketing strategies.

In highly dynamic industries (e.g., computer software, e-commerce), competition is not limited, because of high innovation rates, to products; instead, it includes the comparison and evaluation of firm strategies as well. Investors, channel members, employees, and industry observers (e.g., business media) want to hear the firm's story: how its CEO and staff view the industry dynamics unfolding and what strategies they will emphasize and implement to achieve and sustain industry leadership. Future actions and firm perspectives are punctuated.

In emerging industries, characterized by a paucity of industry standards and often populated by firms short in profits and positive cash flow (e.g., the Internet industry), the compelling "story" told by the CEO and staff often serves to augment conventional business fundamentals as the means by which firm performance and, ultimately, its market valuation are assessed. Similarly, turnaround situations, in which new CEOs are brought on board to "right the ship" (e.g., George Fisher at Kodak, Louis V. Gerstner at IBM, Jack Smith at General Motors), often are gauged by the CEO's comments regarding firm priorities and future actions (e.g., improved attention to the customer, cost reduction through elimination of product lines). The issues of momentum and momentous events, as espoused and promoted by executive management and endorsed by major industry participants, become increasingly critical to a firm's success and overall industry position.

In such situations, CEOs are often highly visible spokespeople and advocates for their companies. Our study suggests that executives in rapidly changing industries or firm environments, in which a strong reputation is needed to inspire confidence in the firm's future, make use of informational strategies, specifically preannouncements and preannouncement campaigns, to reduce uncertainty surrounding their firm and influence the attitudes of various industry constituents (e.g., investors) in favor of the firm.

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An Examination of Organizational Factors Influencing New Product Success in Internal and Alliance-Based Processes

New products provide increased sales, profits, and competitive strength for most organizations. However, nearly 50% of the new products that are introduced each year fail. Organizations thus find themselves in a double bind. On the one hand they must innovate consistently to remain competitive, but on the other hand innovation is risky and expensive. Many organizations are forming business alliances to quicken the pace of and reduce risks associated with innovation. Yet by some estimates, 70% of these alliances fail. Many of the prescriptions for successful alliance management clash with recommendations for effective innovation management. The authors develop testable hypotheses by integrating the new products and alliance literature. A construct—cooperative competency—derived from related concepts of mutual adjustment, absorptive capacity, and relational capability is posited as the key factor affecting new product development success, regardless of whether it is an intra- or interfirm endeavor. The authors test the model with data from a sample survey in the semiconductor manufacturing context and replicate it in the health care sector. The antecedents of cooperative competency—formalized and clannish administration, mutual dependence, and institutional support—are revealed empirically and substantiated. The authors identify the importance and means of developing interfirm cooperation.

New products provide increased sales, profits, and competitive strength for most organizations. Many successful corporations, such as JVC (which pioneered the VHS format for home videocassette recorders) and Apple Computer, owe their fortunes to new products they developed (Cooper 1993). A study of more than 700 of the *Fortune* 1000 companies indicates that new products would provide approximately one-third of their profits over the next five years (Booz, Allen & Hamilton 1982).

However, nearly 50% of the new products that are introduced in the marketplace each year fail, causing considerable financial loss and embarrassment to their promoters (*BusinessWeek* 1993; Zirger and Maidique 1990). At the extreme, Ford Motor Company lost \$250 million with the Edsel in 1958 (approximately \$1.4 billion in current prices), and RCA's failed VideoDisc player, launched in 1981, cost it \$500 million (approximately \$875 million in present

prices; Salmans 1984). R.J. Reynolds lost approximately \$500 million in 1989 trying to develop a cigarette that would preserve the pleasures of smoking without any of its health hazards (*Across the Board* 1998). Recently, Campbell's Soup scrapped its Intelligent Quisine meal program, launched in 1997, aimed at consumers suffering from various ailments, such as high blood pressure and diabetes (*Food Processing* 1998).

Many organizations are entering business alliances to overcome the inherent risks associated with new product development (NPD) and to manage the innovation process and outcome better. A *business alliance* is an "ongoing, formal, business relationship between two or more independent organizations to achieve common goals" (Sheth and Parvatiyar 1992, p. 72). Organizations enter alliances to quicken the pace of innovation, overcome budgetary constraints, spread out risks, and gain access to resources (e.g., technological, financial) not otherwise available to them (Bleeke and Ernst 1993; Varadarajan and Cunningham 1995). For example, Intel has entered into an alliance with Hewlett-Packard to develop a single computer chip capable of running software in both personal computers (PCs) and large computers (*The Wall Street Journal* 1994). Companies are announcing strategic alliances every day. Recently, SBE Inc., a designer of data communication products for the networking market, announced an alliance with Deterministic Networks to provide integrated hardware and software solutions for networking policy management using a PC card (*PR Newswire* 1998a). Other recent technology alliances in-

Eugene Sivadas is an assistant professor, Department of Marketing, Faculty of Management, Rutgers University. F. Robert Dwyer is the Joseph S. Stern Professor of Marketing, Department of Marketing, University of Cincinnati. The research support of the Institute for the Study of Business Markets at Penn State University and the Direct Marketing Policy Center at the University of Cincinnati is gratefully acknowledged. The authors thank Karen Machlert, Ann Welsh, B.J. Zirger, Norm Bruvold, and three anonymous *JM* reviewers for their comments on previous drafts of this article. The first author dedicates this article to the memory of his brother Salll Sivadas.

clude the alliance between Zevco and PTC to develop fuel cells. Zevco will provide alkaline fuel cell technology, and PTC will contribute its manufacturing, system, and fuel processing technology (*PR Newswire* 1998c). Mayo Clinic and Millennium Predictive Medicine (MPM) have announced a five-year alliance to identify and characterize novel gene targets and markers important for diagnosis and treatment of diseases (*PR Newswire* 1998b). The alliance will capitalize on Mayo Clinic's expertise in clinical research and MPM's expertise in pharmacogenomics.

Nevertheless, many alliances tend to be unstable, and a large number of them fail (Gates 1993). Some estimates put the failure rate of alliances as high as 70% (*BusinessWeek* 1986; Parkhe 1993). The potential for conflict and a clash of interest between alliance partners is inherent. Either party can opportunistically use the alliance to learn the other's business or technological secrets (Bucklin and Sengupta 1993). Furthermore, because alliances are largely self-governing, there are no practical higher authorities that can ensure that errant partners will be brought into line (Parkhe 1993).

There is some speculation that administrative mechanisms that manage these uncertainties in alliances impair the NPD objectives. Bidault and Cummings (1994) suggest that there is a fundamental clash between the "logic of innovation" and the "logic of alliances." Alliances succeed when the goals and responsibilities of partners are detailed clearly (Hausler, Hohn, and Lutz 1994; Lorange and Roos 1992). Innovation, however, requires that a measure of flexibility be granted to those directly involved with the project. Alliance partners seek joint control of a project, and departures from prior agreements may involve renegotiation, which thus may impede the flexibility required for effective innovation. Organizations enter into alliances to take advantage of partners' knowledge and strength, but most alliances are characterized by lack of trust (Lorange and Roos 1992). This restricts the free flow of information critical for new product success (e.g., Barclay 1992a, b). These and other requirements regarded as essential to NPD success are difficult to accomplish within the context of alliances (Bidault and Cummings 1994).

Contribution

The literature in both the alliance and NPD fields tends to rely on a bevy of theoretical perspectives and results in models that resemble checklists. Drawing on both organizational theory and strategic management literature and the related concepts of reciprocal interdependence, mutual adjustment, and absorptive capacity, we develop and test a new construct we call "cooperative competency." The result is a parsimonious framework for NPD success that connects the research on alliances. In this article, we provide two empirical tests of the model and show that cooperative competency has a profound association with NPD success, regardless of whether the NPD effort is an intra- or interfirm endeavor, along with the fit of the project to the core competencies of the players. We reveal the antecedents of cooperative competency empirically and largely substantiate them in a second research context. In doing so, we identify

and examine factors that enhance NPD in alliances, show the importance and means of developing interfirm cooperation, and discuss the implications for managing NPD and alliances in general.

Conceptual Model and Hypotheses

The study of alliances is relatively recent, yet a body of empirical understanding has begun to accumulate. Although alliances have been formed for distribution, product bundling, technology sharing, and assorted other purposes, we presume for the time being that the factors of alliance success generalize to NPD goals. Thus, we try to link the checklist of factors for alliance success to the model of new product success. Success factors fall into seven categories of variables: (1) trust, communication, and coordination; (2) governance and administrative mechanisms; (3) partner type; (4) dependence; (5) type of innovation; (6) institutional support; and (7) complementarity of partner competencies. Because the literature in both the alliance and NPD fields underscores the importance of trust, communication, and coordination, we begin there.

Trust, Communication, and Coordination (Cooperative Competency)

Alliances. Organizations in alliances become vulnerable to the actions of partners whose behavior is not under their control (Parkhe 1993). Participants in an alliance might not share one paramount goal. Because partners enter into an alliance to maximize their own gains, it may be advantageous for them to seek gains at the expense of the other partner (Parkhe 1993; Williamson 1985). Lack of trust is inherent and the primary concern in alliances (Wolff 1994).

Trust exists when "one party has confidence in an exchange partner's reliability and integrity" (Morgan and Hunt 1994, p. 23). Predictability, dependability, and faith are three key components of trust (Andaleeb 1992). In a study of vertical partnerships between manufacturers and dealers, Mohr and Spekman (1994) find that successful partnerships were characterized by greater levels of trust. Kanter (1994) studies 37 companies from 11 countries and likewise finds trust to be a key element in alliance success. Similarly, Sherman (1992) finds lack of trust to be a major cause of alliance failure.

Effective communication between partners is essential for alliance success. Communication refers to "the formal as well as informal sharing of meaningful and timely information between firms" (Anderson and Narus 1990, p. 44). It enables goal adjustment, task coordination, and interfirm learning. Mohr and Spekman (1994) find that successful partnerships exhibited better communication quality and information sharing.

No alliance can succeed unless the partners can coordinate their activities competently. Coordination is the specification and execution of roles with minimal redundancy and verification and refers to the extent to which different "units" function according to the requirements of other units and the overall system (see Georgopoulos and Mann 1962; Mohr and Spekman 1994). It requires the parties to be focused on the mission, competent, and reliable. It also de-

mands a good measure of empathy because a great deal of coordination is tacit (Schelling 1957).

New product development. The NPD literature points to the significance of these variables as well. For example, Souder (1981) contends that a spirit of candor, teamwork, and reliance among members of different units is vital to the NPD process. Song, Montoya-Weiss, and Schmidt (1997) contend that, to enable successful NPD, companies must break down the walls between the various departments. They point out that cross-functional cooperation is perceived as critical to NPD success by various departments, including research and development (R&D), marketing, and manufacturing. Conflicts can arise from differences in departmental cultures, differing responsibilities, and reward structures. Vested interests can prevent effective progress on a good project (Urban and Hauser 1980). Therefore, trust is a critical ingredient for interfunctional cooperation, which is critical for NPD success.

Cooper (1993) has noted that, as companies strive to bridge the barriers between functional areas, information critical to the product's formation and function can get withheld, misunderstood, or lost. Sometimes participants may even withhold information because of a lack of trust. These communication difficulties must be resolved for successful NPD. Good communication has long been viewed as a critical element in NPD success (Barclay 1992a; Cooper 1993; Rothwell 1992).

The criticality of cross-functional coordination in NPD comes through clearly in Zirger and Maidique's (1990) research. They rely on strategic management theory in their propositions that strong R&D and marketing-manufacturing prowess and coordination are essential for NPD success. Lack of familiarity with another unit's procedures and personnel can result in the neglect of some tasks and the repetition of others. No one department alone possesses the expertise to develop a product that will meet the requirements of the organization. Innovators need some mechanism to connect departmental "thought worlds" so that insights possessed by individual departments can be combined to develop new products that harness the collective wisdom of all involved. In the absence of proper coordination, efficiency suffers and goal attainment is delayed or thwarted.

Cooperative competency. We use the term *cooperative competency* to refer to the midrange variable composed of three interrelated facets: trust, communication, and coordination. Cooperative competency is a property of the relationship among the organizational entities participating in NPD. We do not claim that these three variables exhaust the domain of this cooperative competency but regard them as three compelling facets of this relationship attribute. Regardless of whether the NPD effort is an intra- or interorganizational enterprise, its success hinges on the cooperative competency of the units involved.

The conceptual foundations for cooperative competency are well established in organization theory. Thompson (1967) points out that effective exchange agreements, such as those among departmental units for internal NPD or between firms in alliances, rely on prior consensus regarding the responsibilities of the parties involved and a clear un-

derstanding of what each partner will do. The situation involves "reciprocal interdependence," in which each unit involved depends on the other. In situations of such interdependence, a shared commitment is necessary to achieve goals, and "concerted actions come about through coordination" (Thompson 1967, p. 55), particularly "coordination by mutual adjustment" (Thompson 1967, p. 56). Naturally, the negotiation and ordering of behaviors involves communication and feedback. Furthermore, Thompson argues, mutuality of commitment in situations of reciprocal interdependence reduces uncertainty for the parties. It provides a basis for joint decision making and bridles opportunistic tendencies. Thus, there is the basis for trust. It is difficult to imagine meaningful communication and bona fide adjustment in the absence of trust.

The need for cooperative competency in a relationship arises from reciprocal dependence in NPD and the constraints imposed by the need for mutual adjustment. The constraints impel information sharing and feedback, as well as trustworthy and trusting behaviors by the participants. The concept of cooperative competency relates to Cohen and Levinthal's (1990) concept of absorptive capacity (the ability of firms to assimilate and make use of new information or technologies), as well as Dyer and Singh's (1998) notion of relational capability (the competitive advantage from the ability to forge, develop, and govern partnerships). We suspect that the make-up and skill sets of the units in NPD can affect the cooperative competency of the relationship, but our focus here centers on relationship antecedents. It follows, however, that if we have specified the pivotal role of cooperative competency in NPD success correctly, the organizational capability to relate must rest on the organization's understanding of the relationship characteristics that affect cooperative competency.

To summarize, the literature clearly shows that successful alliances hinge on the ability of the partners to trust, communicate, and coordinate. As Brouthers, Brouthers, and Wilkinson (1995) point out, alliances without cooperative cultures tend to fail. We should not be surprised to find that the same factors are identified as requisites to NPD success because, whether or not NPD is undertaken jointly with another organization, it is a cooperative enterprise with other functional units—R&D, marketing, and manufacturing (see Song, Montoya-Weiss, and Schmidt 1997). Moreover, as Dyer and Singh (1998) point out, alliance partners must generate and enhance their knowledge-absorbing capacities and generate routines that facilitate sharing of information. Thus, the parties involved in an NPD project, be it conducted internally or externally, must share, digest, and act on information. It is this transfer and recombination of information that allows for the creation of new knowledge.

Cooperative competency manifests itself through the effective exchange of information (communication) and the negotiation and design of activities and roles (coordination). Without trust, there can be little sharing of information, only minimal regard for system requirements, weak follow-through, and low goal attainment. Cooperative competency is the ability of interacting units (within or across firms) to adjust mutually. It is manifested in trust, communication, and coordination and is greater than any of

these three constructs considered independently. Cooperative competency is a relationship property, very much in accord with Thompson's (1967) theoretical development of mutual interdependence.

By regarding trust, communication, and cooperation as facets of the second-order variable cooperative competency and NPD success as the objective of interfunctional and interfirm cooperation, we can hypothesize the following:

H_{1a}: Cooperative competency among the departmental units involved is related positively to internal NPD success.

H_{1b}: Cooperative competency among the partners is related positively to alliance NPD success.

Governance and Administrative Mechanisms

A strategic alliance is fundamentally an interorganizational system applied to the process of NPD. Thus, we should observe the effects of alliances, as a governance mode, on NPD success primarily through cooperative competency. Following institutional economics (see Williamson 1985), the internalization of complex tasks involving performance ambiguity and hazards of opportunism generally is favored over interfirm exchanges because it provides for common goals, auditability, more frequent and richer communications, and attitudinal solidarity. Generalizing from limited empirical work (see Boyle et al. 1992) that shows higher communication frequency and stronger relational norms in corporate channel systems than in other interfirm arrangements, internal NPD should outperform alliances on trust, communication, and coordination, the facets of cooperative competency.

New knowledge in firms is created through a combination of individuals' tacit and objective knowledge (Tucker, Meyer, and Westerman 1996). Although objective knowledge is observable and explicit, tacit knowledge, "the unexpected knowing that precedes and underpins" (Spender 1993, p. 7) any communication, is based on the shared set of experiences of the individuals. Tacit knowledge is communicated through a set of roles and interaction patterns specific to an organization. Thus, effective and efficient tacit knowledge integration results from a communication system that facilitates shared experience among individuals. The kind of knowledge that alliance partners seek to exchange is of a tacit nature and is rather difficult to codify (Dyer and Singh 1998; Kogut and Zander 1992). People who work together accumulate a shared set of information and know-how, and this proximity enables them to understand who possesses what type of expertise (Asanuma 1989; Dyer and Singh 1998). Consequently, this enhances the quality of communication and cooperation and enables superior performance on innovation projects (von Hippel 1988). Participants in alliance innovation belonging to different organizations might not share the same organizational culture and therefore lack the same extent of history and proximity of working together and the tacit knowledge that personnel who work together on internally conducted projects have. In terms of our model, we have the following:

H₂: Cooperative competency is affected by governance structures, in that internally conducted innovation processes

provide higher levels of cooperative competency than those in the NPD efforts of alliances.

Multifunction teams and alliances need administrative mechanisms that provide the parties with a measure of certainty regarding roles and procedures for making decisions and determining the scope of participants who provide input. Three commonly used administrative mechanisms are formalization, centralization, or clannish mechanisms.

Formalization, the use of explicit rules in the relationship, has been identified as an impediment to the spontaneity and flexibility needed for internal innovation (Bidault and Cummings 1994). However, between firms, formalization tends to enhance effectiveness and cooperation (see Dahlstrom, Dwyer, and Chandrashekar 1995).

Centralization, the concentration of decision-making authority, typically impairs effectiveness, because it increases perceptions of bureaucratic structuring, which decreases the favorability of participants' attitudes toward the project and results in increased opportunism (see John 1984). Centralization creates a nonparticipatory environment that reduces communication among participants, commitment, and involvement with projects and is associated negatively with innovation success (Damanpour 1991; Moenaert et al. 1994).

A *clan system* is governed by shared values and norms. This common ground limits the needs for monitoring and other bureaucratic devices and should enhance the abilities of the parties to work cooperatively, because it is a set of common values that governs their behavior (Ouchi 1980).

Thus, we hypothesize the following:

H_{3a}: Cooperative competency is affected positively by administrative mechanisms that are formalized.

H_{3b}: Cooperative competency is affected positively by administrative mechanisms that are decentralized.

H_{3c}: Cooperative competency is affected positively by administrative mechanisms that are clannish.

Partner Type

The success of strategic alliances depends on the strategic fit among the partners' products, markets, and objectives (see Gates 1993; Harrigan 1988). When organizations enter into an alliance with similar but not complementary motives, conflict is likely to arise because of the clash of interests and consequent opportunism and lack of trust.

In the alliance literature, one aspect of fit refers to the relationship the partners have outside the alliance. One concrete question looms large: Are the partners competitors? Competitors are apt to hold many common understandings of the market, product development, and production. This shared understanding of markets and technology makes for a good fit, but partners might be suspicious of each other. Concerns about zero-sum opportunities, long-term partner motives, and the vulnerability of proprietary know-how may not make for a good match and thus seriously impair fit (see Sheth and Parvatiyar 1992). Companies should not enter into alliances with others that have competing goals, and alliances are likely to fail if they do not advance both companies' strategic goals (Brouthers, Brouthers, and Wilkinson 1995). On balance, it would seem difficult for competitors to cooperate.

H₄: Noncompetitor alliances foster higher cooperative competency than competitor alliances.

Mutual Dependence

Alliances that are dominated by a single partner typically have a high rate of failure (Gates 1993). The dominated partner typically stands to lose from such arrangements and hence the high failure rate. Partners should safeguard their core competencies (Lorange and Roos 1992) to discourage partners from breaking the rules governing the alliance. But as McAlister, Bazerman, and Fader (1986) explain, asymmetrical dependence interferes with joint problem solving because the weaker party guards against exploitation while the stronger tends to probe the boundaries of exploitation or guard against the appearance of intentions to exploit. This combination of pressures on the relationship severely taxes the ability of the parties to cooperate in unbalanced power contexts. Parties that do not depend on each other have little motivation to cooperate (Harrigan 1988). Both Harrigan (1988) and Brouthers, Brouthers, and Wilkinson (1995) point out that alliances last longer between partners of similar size. Brouthers, Brouthers, and Wilkinson (1995) suggest that symmetrical partnerships tend to foster a cooperative culture and that alliances without cooperative cultures tend to fail. We therefore have the following:

H₅: Highly mutually dependent alliances foster higher cooperative competency than otherwise, namely, when dependence is skewed or minimal.

Innovation Type

A central issue is the nature of the innovation sought in the alliance. Radical innovations may tax existing systems of communication and patterns of collaboration more than incremental innovation. Radical innovations require a greater outlay of resources and are riskier than incremental advances (Kotler 1997). Radical innovations are inherently more unpredictable and uncertain (Rice et al. 1998). The stage-gate approach, in which product development occurs in clearly defined and formally approved stages, is difficult to accomplish in radical innovation projects (Song and Xie 1995). Radical innovations require participants to engage in more learning and unlearning and to develop new capabilities. Consequently, there is greater need for reorientation of existing structures and processes (Nord and Tucker 1987). Long-standing patterns of informal communication might be absent in radical innovation projects. In contrast, incremental innovations benefit greatly from existing competencies, and organizational relationships and demands placed on participants are comparatively lower (Nord and Tucker 1987).

The higher stakes, demands, unfamiliarity, and unpredictability of radical innovation make these projects more prone to communication breakdowns and make the task of coordinating the projects more difficult. However, radical innovation projects tend to be "star projects," and consequently participants tend to be more committed to them (Schmidt and Calantone 1998). Radical innovations may benefit from a Hawthorne effect, because participants give extra effort to a project in the limelight.

Thus, we hypothesize the following:

H₆: Incremental innovation projects foster higher cooperative competency than radical innovation projects do.

Institutional Support

Many alliance researchers have suggested that "effective institutional rules or social controls for facilitating agreements" would improve alliance success (Dyer and Singh 1998, p. 673; North 1990). As Zirger and Maidique (1990), relying on rudimentary leadership theory, point out, favorable top management support can be the impetus for overcoming implicit barriers between functions, providing the requisite organizational resources, and sparking a spirit of commitment to NPD. Cooper and Kleinschmidt (1995) also identify both top management support and good teamwork as critical to new product success. Kuczmarski (1988) argues that top management support can create a positive environment that facilitates the overcoming of barriers to new product success. This positive climate fosters greater dedication for the project.

Dyer and Singh (1998) note that institutionally embedded arrangements control opportunistic behavior. Top management support is reflected, for example, in the creation of a position called Director of Strategic Alliances at several *Fortune* 100 companies, whose job it is to identify and evaluate alliance potentialities and possibilities (Dyer and Singh 1998). We examine the effectiveness of top management in creating a climate for the success of the alliance. Top management can create such a climate by clarifying the responsibilities and contribution of the parties involved in the alliance, because this is at the heart of the exchange process (see Thompson 1967). Dyer and Singh (1998) classify such arrangements as third-party arrangements that minimize transaction costs and increase alliance effectiveness. Dyer and Singh note the importance of arrangements that promote or at least do not hinder "goodwill." We suggest that goodwill will be hindered when key players try to resist or sabotage the alliance.

Therefore, we hypothesize the following:

H₇: Cooperative competency among the alliance partners involved derives from favorable institutional support (clarity of agreement and lack of resistance) for the alliance NPD effort.

Complementarity of Partner Competencies and NPD Success

In the innovation literature, Cooper (1979), Tushman and Romanelli (1985), and others have argued that products are more likely to be successful if they build on a firm's existing technologies and market strengths. The logic of this factor of NPD pivots on the intersection of population ecology and learning theory: Firms enhance their survivability by doing what they do best in the ecosystem that favors them. At the same time, new systems, technologies, personnel, and customers can disrupt patterns of work and impair the speed of the project. Maidique and Zirger (1984, 1985; Zirger and Maidique 1990) have shown empirically the relationship between NPD success and connection to the firm's competen-

cies (see Barclay 1992a; Calantone, di Benedetto, and Divine 1992). Dyer and Singh (1998) and Harrigan (1985) point out that firms that combine resources can gain a competitive advantage over firms that are unable to do so, and this is viewed as one of the key benefits of strategic alliances. As Harrigan (1985; Harrigan and Newman 1990) suggests, the primary impetus for firms to cooperate emerges because partners can add resources that a firm does not have access to internally and may find difficult or too expensive to acquire on its own. Harrigan further suggests that partners will be inclined to cooperate when their resources and objectives complement each other, because this will permit the creation of new products that each party may find difficult or time-consuming to create individually.

H₈: NPD success is related positively to activities that complement and build on partners' core competencies.

In Figure 1, we summarize this discussion and provide a reference point for the eight formal hypotheses. New product development success is our ultimate criterion variable in the model, and its direct antecedents include the new midrange variable we call cooperative competency. As a second-order variable reflected by interunit trust, communication, and coordination, cooperative competency has essential elements identified in both the alliance and NPD literature. The effect of alliances on the NPD effort is

hypothesized to work through NPD's tendency to impair cooperative competency. Similarly, five other variables regarded as factors of alliance success are logically modeled as antecedents of cooperative competency. We also examine the moderating role of governance structures on cooperative competency and NPD success.

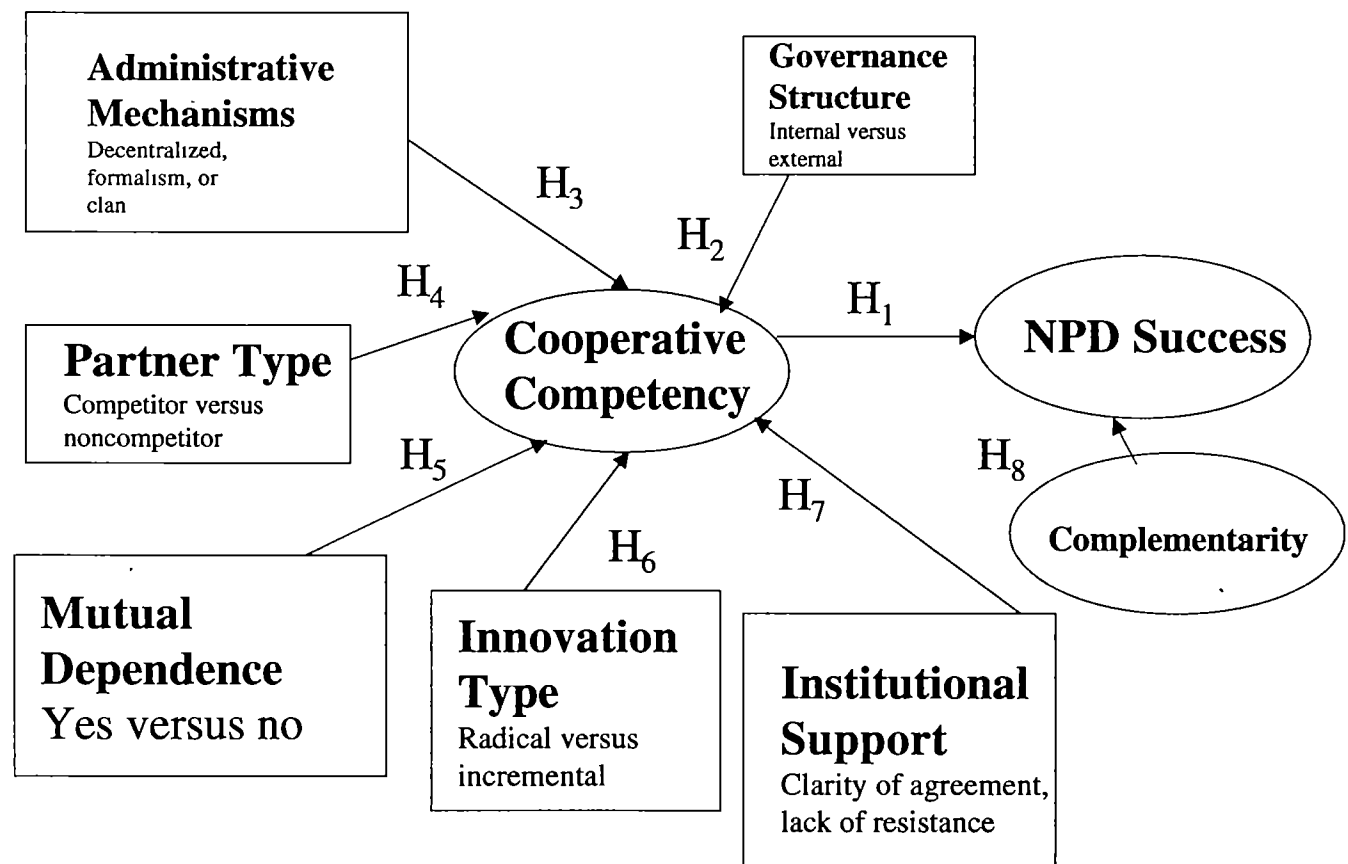
Method

The Contexts for Theory Testing

Semiconductor industry. We chose the semiconductor industry as the primary context for our research. The semiconductor industry (standard industrial classification [SIC] code 3674) includes approximately 400 firms, including Digital Equipment Corporation, Intel, Motorola, and Texas Instruments. This industry tends to be innovative and enters into a variety of partnership agreements (Dutta and Weiss 1994). Technological innovation was identified as a top concern for the 1990s by chief executive officers (CEOs) of the U.S. electronics industry, and 50% of those surveyed indicated that they were looking for research partnerships (Rayner 1991).

In one year alone, 130 alliance partnerships were reported in the semiconductor industry (*U.S. Industrial Outlook* 1993). For example, Advanced Micro Devices and Fu-

FIGURE 1
Factors Affecting Cooperative Competency and New Product Success



jitsu entered into an alliance to develop a chip that can replace the hard disk drive in computers (*New York Times* 1992).

Demands from telecommunications, computer networking, automobile electronics, high-definition television, smart credit cards, and the PC industry make the semiconductor industry competitive, innovative, and high growth. The Semiconductor Chip Protection Act of 1984 protects a semiconductor's design for up to ten years, which thus provides an added incentive for innovation (*Standard and Poor's Industry Surveys* 1994).

The health care sector. The health care sector, or more specifically, "General Medical and Surgical Hospitals" (SIC code 8062), was used as a second context to replicate the hypotheses relating specifically to the introduction of new services by alliances. Approximately 30% of U.S. hospitals are members of alliances (Zuckerman and D'Aunno 1990). Resource crunch, need for cost containment, need to be innovative, increased interdependency between research and clinical service, and changing disease patterns are prompting hospitals to engage in alliances (Kaluzny and Sheps 1992). Their NPD efforts are exemplified by innovations in ambulatory care and home health care and acquisition of new medical technology (Halverson, Kaluzny, and Young 1997).

Wrenn, Latour, and Calder (1994, p. 353) point out that "the belief that hospitals are fundamentally different in function and structure from for-profit, product producing companies has existed for some time." Mintzberg (1979) refers to hospitals as professional bureaucracies in which professionals enjoy a great degree of autonomy and power. Control in such organizations is based on bureaucracy and a system of shared values. Thus, a replication in the hospital sector is a reasonable test of the generality of the theory.

Measures

Measures were developed and refined on the basis of the guidelines provided by Churchill (1979) and Gerbing and Anderson (1988). The relationship between alliance partners (for external NPD) and departments (for internal NPD) are the units of analysis for the study. Our 12-page questionnaire consisted of two sections, the first focused on an internally conducted NPD project. The latter part of the questionnaire focused on experiences with NPD projects conducted through alliances. Respondents (heads of R&D at semiconductor firms and chief operating officers at hospitals) were asked to select projects that came to their attention most recently (not a successful, failed, or typical project but one that they worked on most recently; for example, they might have attended a meeting to review the project). The Appendix presents the measures used in the study.

Product success refers to a product's successful development. Product success was measured using a five-item scale that evaluates the new product on quality, time taken, market share, speed to market, and meeting of target costs. Three additional items were used to measure the financial success and market share for this product. Although marketplace success was correlated highly with development success in both the semiconductor and health care sectors, because of the focus of our research, we analyze only

development success. We used Cooper's (1993) work as a guide to help specify the domain of this construct.

We combined three related variables—trust, communication, and coordination—to develop the higher-order construct we call cooperative competency. Our measure of cooperative competency is a summated measure of trust, communication, and coordination. *Trust* is defined as the confidence an organization (or department) has in the ability and motivation of the alliance partner (or other departments) to produce positive outcomes for the organization. Our six-item measure of trust builds on Mohr and Spekman's (1994) and Morgan and Hunt's (1994) work but includes an ability item and a reliability item.

Communication is conceptualized to include the formal and informal sharing of timely, adequate, critical, and proprietary information among alliance partners. We use a set of items modified from Mohr and Spekman's (1994) instrument. The communication measure is a five-item, five-point Likert-type scale that reflects communication quality (timeliness and adequacy of information) and information sharing (willingness to exchange critical proprietary information).

"Coordination is often discussed but seldom measured" (Price and Mueller 1986, p. 108); we define *coordination* as the extent to which activities, people, routines, and assignments work together to accomplish overall objectives. This is consistent with Georgopoulos and Mann's (1962) notion of intraorganizational coordination as the extent to which the alliance members (or departments) function according to the needs and requirements of the other parts and the total system. Similarly, Mohr and Spekman (1994, p. 138) view coordination as "the set of tasks each party expects the other to perform." A five-item measure borrowed from Georgopoulos and Mann's measure was modified to make it suitable for assessing coordination in both interorganizational and interdepartmental settings.

Three types of alliance control mechanisms are examined in a six-item battery: centralization, the extent of concentration of decision making; formalization, the extent to which explicit rules and procedures govern decision making; and clan control, the degree to which governance is conducted by shared values (Ouchi 1980). These were measured using five-point Likert-type scales (see Dwyer and Welsh 1985).

A competitor alliance is one in which parties to the alliance are in either direct (e.g., an alliance between two automakers) or indirect (e.g., an alliance between a steel and a plastic manufacturer) competition outside the relationship. A noncompetitor alliance is one in which parties to the alliance do not vie for the same customers outside the relationship. A four-item scale was used to classify the alliances on these dimensions. Informants were asked to indicate whether their partner was a competitor in the same or a different industry, a supplier, or a customer.

Mutual dependence among the alliance partners is conceptualized from the Emersonian (1962) perspective; namely, the power of A over B derives from B's dependence on A. Our focus is on an alliance partner's relative dependence, the difference between the dependence of the focal firm and its partner on the alliance. To make it suitable for assessing dependence in alliances, a modified version of the

instruments used by Anderson and Narus (1990) and Boyle and Dwyer (1995) was employed. Two sets of four-item, five-point Likert-type scales (both completed by the same informant) were used to measure the perceived relative dependence of the alliance partners. From these data, we made a dichotomous indicator variable. Partnerships in which both parties depended on the other and exhibited marginal or no asymmetry in dependence (no difference in the dependence of focal firm and its partner in the alliance) were categorized as high mutually dependent relationships. Alliances exhibiting asymmetry in dependence or balanced at an insignificant level (both partners had low levels of power dependence) were classified otherwise.

All innovations lie on a continuum of newness. We adopt the dichotomous classification of innovations presented in the literature and classify all new products as incremental or radical. Radical innovations are new-to-the-world, pioneering products that represent technological breakthroughs. Incremental innovations refer to improvements and revisions to existing products and additions that supplement a company's existing product lines (see Booz, Allen & Hamilton 1982). A four-item measure building on Cooper's (1993) work is employed to classify innovations into one of these categories. An innovation was classified as radical if respondents indicated that the innovation was pioneering and did not build directly on existing technology.

Institutional support for the alliance was measured on a four-item, five-point scale, with two items each for clarity of agreement (extent of clear-cut understanding about financial resources and manpower each side was expected to contribute) and lack of resistance (extent to which there was no resistance from key players in both organizations).

The primary rationale for entering into alliances is that a partner brings resources that are not accessible to a firm internally. Complementarity of partner competencies was measured using a two-item, five-point scale. The items measured the extent of synergy in the objectives and capabilities of the partners.

Measure Purification

The measures were reviewed by two panels. The academic panel consisted of five advanced doctoral students who performed a card-sorting exercise to match items to construct definitions. The professional panel consisted of senior executives in four organizations (two in semiconductor companies and two in the hospital sector). They evaluated the battery for clarity and relevance. Overall, they indicated that the questions were clear and relevant, except for one original trust item, which was dropped. Overall, the favorable comments of the panel and key informants, combined with the prior use of many measures, gave us confidence for the pilot test.

The Sampling Frame: The Semiconductor Context

A list of semiconductor firms with more than 20 employees was purchased on disk from a leading independent list compiler. The list contained names of 718 semiconductor firms, similar to the numbers reported by many other list compilers but far greater than those reported by Darnay (1993) (457 semiconductor companies) and Gale Research's (1994)

Ward's Business Directory (346 semiconductor companies). After eliminating what appeared to be multiple sites of the same company, sales offices, and small subcontractors, there were 600 companies on the list. These 600 companies (the universe of semiconductor firms) constituted the sampling frame.

The Pilot Test

We selected 150 companies from the sampling frame on a fourth-name basis for the pretest. These companies were contacted by telephone to (1) obtain the name of the key informant (i.e., head of the R&D department) so that the survey could be addressed to that individual, (2) prenotify this key informant about the survey and solicit participation, and (3) verify the mailing address of the firm. Many of the smaller companies did not have a formal R&D department, and that function was assumed by the engineering department. In these cases, the contact person was the president, CEO, or head of the engineering department. The person in the company in charge of the R&D function was the one who completed the survey.

The questionnaires were mailed with a cover letter, a \$2 bill as incentive, and a first-class, postage-paid return envelope. The cover letter explained the purpose of the survey and contained a nondisclosure agreement indicating that the responses would be treated confidentially. Following Yu and Cooper (1983), we used appeals that highlighted the importance of each response and the research. We also offered to share the results in summary form if the informants so desired. A reminder/thank you card was mailed ten days after the questionnaire was mailed. After four weeks, 40 completed surveys were received. This 28% response rate is comparable to that reported in other studies on strategic alliances (e.g., Mohr and Spekman 1994; Parkhe 1993).

All measures had very high reliabilities with coefficient alphas greater than .80 in all cases. Using Gerbing and Anderson's (1988) paradigm, all measures survived an exploratory factor analysis. In the confirmatory factor analysis (CFA), the chi-squares were significant, but based on the maximum likelihood factor loadings, goodness-of-fit indexes, root mean squared residuals, and normalized residuals, we appear to have unidimensional, internally consistent, and reliable measures.

Overall, our measures performed well, and we made only minor modifications to some of the measures for the main study. To make the 12-page instrument less burdensome, we trimmed one item from each scale (for trust and communication) with coefficient alphas greater than .90 (DeVellis 1991). We substantially revised the measure for radical versus incremental innovation to enhance its content validity. (The measures retained for the main study are reported in the Appendix.)

The Main Study

After using 150 of the 600 semiconductor firms for the pilot study, we drew 350 for the main study. We used nth-name sampling to draw a representative sample. For the pilot test every fourth company on the list was drawn, whereas for the main study we omitted 100 of the 450 companies remaining on the list. We also wanted to ensure that all major semi-

conductor firms were part of our sample. We ensured this by including all publicly traded semiconductor firms (Compu-stat PC+, a Standard and Poor database that lists all publicly traded firms, was cross-referenced to identify publicly traded semiconductor firms), then filling in the rest on an nth-name basis, leaving every third of the remaining names out. The protocol for the main study was similar to that of the pilot study, beginning with telephone name verification and prenotification of the surveys.

The prenotification phase eliminated 68 firms for one of the following reasons: (1) the firm was not a semiconductor manufacturer, (2) the telephone number was disconnected, (3) the company was no longer in business, (4) the company was a sales or purchasing outfit only, (5) the R&D facilities were located in a foreign country, or (6) the company had a strict no-survey policy.

We sent 282 questionnaires with a new cover letter that encouraged firms that had not entered into alliances also to respond to the survey. Approximately four weeks after the initial mailing, nonrespondents were mailed a second copy of the questionnaire, thanked if they already had completed the survey, and urged to do so if they had not.

Of the 282 questionnaires mailed, 26 were returned because (1) the key informant declined to participate in the survey, (2) the company was not in the semiconductor business, or (3) the company was in the semiconductor business but did not manufacture semiconductors. In the end, 95 completed responses were received. Our 37% response rate compares favorably with those reported in other studies (e.g., Parkhe 1993). Following the procedure recommended by Armstrong and Overton (1977), we compared early respondents with late respondents to examine nonresponse bias. The tests did not indicate any bias due to nonresponse.

Confirmatory factor analyses. The CFAs provided similar fit values to those reported in the pilot data. Because the measures performed similarly in the pilot and final studies, we pooled the data for hypotheses testing. Initially, separate

single-factor models were evaluated for each of the constructs' measures. It was not possible to run CFA on all measures in the study simultaneously because of sample size constraints; the ratio of sample size to the number of free parameters did not approach the minimum 5:1 requirements (see Bagozzi and Baumgartner 1994). Next, we ran two three-factor models for cooperative competency (trust, communication, and coordination) and administrative mechanisms (formalization, centralization, and clan).

We ran a series of second-order factor analyses in both the health care and semiconductor sectors to examine our midrange variable of cooperative competency. We examined convergent validity by examining if each indicator's estimated coefficient was significant (greater than twice its standard error). All the factor loadings were significant, indicating convergent validity (cf. Gerbing and Anderson 1988). The normalized residuals were all less than |2.0|. Next, we examined discriminant validity between cooperative competency and new product success using two methods. First, as recommended by Gerbing and Anderson (1988), we find that the factor correlations were less than 1.0, which indicates discriminant validity. Second, using the criterion set forth by Dillon and Goldstein (1984), we examined whether the average variance extracted for the measures was greater than .50. This test examines whether the variation observed is due to the construct and not to measurement error. The average variance extracted was greater than .50 in all cases and greater than the squared structural link between the constructs, which provides further evidence of discriminant validity. The coefficient alpha reliabilities for the pooled data, along with the CFAs, are reported in Table 1.¹ These results provide evidence of the unidimensionality of the constructs.

¹The CFA and coefficient alpha were computed only for items retained for the main study; that is, items eliminated after the pilot test were not included in the pooled analysis.

TABLE 1
Confirmatory Factor Analyses Results: Semiconductor Pooled Data

Measure (Object)	Chi-Square	GFI	AGFI	RMSR	Number of Items	Alpha
Trust (internal)	34.38, 9 d.f., $p = .000$	.916	.853	.05	6	.87
Trust (alliance)	35.59, 9 d.f., $p = .000$	.885	.799	.07	6	.85
Communication (internal)	14.22, 5 d.f., $p = .014$	.960	.941	.03	5	.88
Communication (alliance)	27.15, 5 d.f., $p = .000$	.885	.827	.06	5	.85
Coordination (internal)	12.31, 5 d.f., $p = .031$	.967	.950	.02	5	.89
Coordination (alliance)	18.13, 5 d.f., $p = .003$	.924	.886	.05	5	.85
NPD success (internal)	9.67, 5 d.f., $p = .085$	.97	.90	.05	5	.68
NPD success (alliance)	13.78, 5 d.f., $p = .17$	.93	.79	.06	5	.79
Cooperative competency (internal)	5.54, 4 d.f., $p = .24$	.960	.870	.04	16*	.94
Cooperative competency (alliance)	12.65, 4 d.f., $p = .01$	.920	.710	.06	16*	.91
Administrative mechanisms (formal, central, clan)	2.26, 6 d.f., $p = .89$	.99	.96	.04	6	—

Notes: All items for internal and external were parallel phrased. GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, RMSR = root mean squared residual, and d.f. = degrees of freedom.

*Second-order factor analysis.

Sample Frame and Protocol: Health Care Context

As we indicated previously, health care was used as a second context to test the hypotheses to make possible greater generalizability of the theory. Resource constraints enabled us to administer only a truncated version of the semiconductor questionnaire for the health care context. Questions pertained to experiences with alliance innovation only; no questions were asked about internal innovation processes for health care.

Using the same protocol as in the semiconductor industry, 250 questionnaires were mailed to chief operating officers in hospitals. We received 117 responses, of which 52 were from organizations that had partaken in alliances. The measures performed well in the health care context also; all measures showed unidimensionality and reliability (coefficient alpha greater than .70).

Findings

Tables 2, Parts A and B, report correlations among the variables previously presented. On examining the correlation matrices, we find that there is a significant association between cooperative competency and NPD success in both the health care ($r = .29, p = .04$) and semiconductor ($r = .30, p = .004$) sectors. As we discussed previously, in the semiconductor sector, we had examined both internal and alliance-based innovation by asking respondents to share their experience with both an internal and an alliance-based project. As is shown in Table 2, Part A, there is a significant association between successful management of internal and alliance-based innovation process ($r = .38, p = .000$) and between cooperative competencies in internally and externally conducted projects ($r = .37, p = .000$). Thus, it appears that at some level both cooperative competency and NPD success are firm-specific competencies.

The data were analyzed using a series of ordinary least squares regression analyses. Our model suggests that (1) cooperative competency and complementarity of partner competencies affect NPD success and (2) governance structure, administrative mechanisms, type of partner and innovation, mutual dependence, and institutional support affect cooperative competency. These models are written out as follows:

NPD success = $f\{\text{cooperative competency, complementarity of partners}\}$.

Cooperative competency = $f\{\text{formalization, centralization, clan, partner type (competitor or noncompetitor), innovation type (radical or incremental), mutual dependence, institutional support (clarity of agreement and lack of resistance)}\}$.

Relevant to the tests of H_1 , NPD success = $f(\text{cooperative competency})$, we find that NPD success is associated positively with cooperative competency in both internally ($b = .375, p < .01$) and externally ($b = .301, p < .01$) conducted projects in the semiconductor industry. These results are replicated for the health care sector ($b = .293, p < .05$). See Table 3.

H_2 examines whether cooperative competency is affected by governance structure (innovation is conducted internally versus externally). We began our analysis with a paired samples t-test, which indicated that a higher level of cooperative competency is observed in internal ($\bar{X} = 10.72$) as opposed to external ($\bar{X} = 10.21$) NPD projects ($t = 2.54, p = .01$). We then used moderator analysis to examine whether governance structure (innovation was internal or external) significantly moderated the impact of cooperative competency on NPD success. Using the procedure recommended by Cohen and Cohen (1975) and Baron and Kenny (1986), we do not find evidence of moderation. (The procedure is to regress both cooperative competency and mode of governance and their interaction on NPD success.) The interaction term (between governance structure and cooperative competency) in the regression model was not significant, thus indicating that, though cooperative competency is significantly higher in internal NPD projects, governance structure (internal or externally conducted innovation) per se does not appear to affect the impact of cooperative competency on NPD success.

The antecedents of cooperative competency were examined in the multiple regression analysis summarized in Table 4. With cooperative competency as the dependent variable, we tested H_3 – H_7 by examining the statistical significance of the coefficients in the two models, one for semiconductor and one for health care. Because of sample size constraints and the dichotomous nature of many of the variables examined, it was not possible to test the hypotheses using a full information maximum likelihood model. Nevertheless, because of the high reliabilities of our measures, the inability to partial out measurement error is not a substantial drawback. The use of multiple regression provides a more conservative test of the hypotheses.

As hypothesized in H_3 , cooperative competency is associated positively with formalized ($b = .252, p < .05$) relations. Furthermore, as hypothesized, there appears to be a positive relationship between clan-oriented administrative mechanisms and cooperative competency ($b = .236, p < .05$). Although there appears to be a negative relationship between centralized mechanisms and cooperative competency ($b = -.1146, p = .17$), the results are not statistically significant. In the health care sector, cooperative competencies are associated positively with clan-oriented relations ($b = .257, p < .05$) but not with formalized or decentralized administrative mechanisms. Thus, overall H_3 is partially supported. Although not formally hypothesized, we examined the interaction among these administrative mechanisms. Although such examination brings forth problems of multicollinearity, we find evidence of interaction between formalized and clan-oriented mechanisms in the semiconductor sector. Thus, a combination of value- and rule-based exchanges promotes cooperative competency. In the health care sector, there is no evidence of interactions among these administrative mechanisms.

H_4 was not supported. The type of partner (competitor versus noncompetitor) does not appear to affect cooperative competency. H_4 was not statistically significant in the semiconductor sector (approximately 38% of alliances were competitor and the rest were noncompetitor alliances) and

TABLE 2
Correlation Among Constructs

A: Semiconductor Industry (Pooled Data)													
	1	2	3	4	5	6	7	8	9	10	11	12	13
1. NPD success (Internal)	1.00	.38*	.38*	.05	.12	.20	.01	.10	.04	.12	.13	.13	-.08
2. NPD success (Alliance)		1.00	.29*	.30*	.35*	.24**	.08	.08	-.12	.25**	-.001	.007	-.26*
3. Cooperative competence (Internal)			1.00	.37*	.22	.15	.01	.20	-.10	.21	.20	.05	-.17
4. Cooperative competence (Alliance)				1.00	.57*	.38*	.40*	.21	-.23	.48*	.35*	.16	.36*
5. Complementarity					1.00	.29**	.57*	-.09	-.16	.34*	.52*	.15	.40*
6. Clarity						1.00	.34*	.19	-.11	.40*	.09	.04	.13
7. Lack of resistance							1.00	-.08	-.36*	.39*	.28**	.04	.49*
8. Formalization								1.00	.31*	.03	.03	.08	-.19
9. Centralization									1.00	-.19	-.20	-.06	.04
10. Clan										1.00	.12	-.09	.12
11. Mutual dependence											1.00	.14	.15
12. Radical/incremental												1.00	.32*
13. Competitor/noncompetitor													1.00

*Indicates significance at $p = .01$.

**Indicates significance at $p = .05$.

Notes: Sample sizes range from 118 (for the internal measures) to 62 (for formalization, centralization, and clan).

B: Health Care Industry										
	1	2	3	4	5	6	7	8	9	10
1. NPD success	1.00	.30**	.12	.29**	-.19	.005	-.14	.08	.10	.10
2. Cooperative competency		1.00	.47*	.44*	.49*	.09	.12	.23***	.13	-.26***
3. Complementarity			1.00	.23***	.41*	-.03	.15	-.37*	.21	-.26***
4. Clarity				1.00	.29**	.28**	.19	.20	.01	-.10
5. Lack of resistance					1.00	.23	.41*	.05	-.04	-.22
6. Formalization						1.00	.40*	.33*	-.02	.21
7. Centralization							1.00	.007	.22	.03
8. Clan								1.00	-.22	.19
9. Mutual dependence									1.00	-.05
10. Radical/incremental										1.00

*Indicates significance at $p = .01$.

**Indicates significance at $p = .05$.

***Indicates significance at $p = .10$.

Notes: Sample sizes range from 50 to 52.

TABLE 3
New Product Development Success: Cooperative Competency

	b (t) p	R²	F(p)
Semiconductor NPD success internal (n = 118)	.375 (4.36) .000	.14	19.03, <i>p</i> = .000
Semiconductor NPD success alliance (n = 89)	.301 (2.94) .004	.09	8.65, <i>p</i> = .004
Healthcare NPD success alliance (n = 50)	.293 (2.12) .039	.086	4.49, <i>p</i> = .039

could not be tested in the health care sector because only two of the alliances were characterized by respondents as competitor alliances. Thus, we cannot conclude that cooperative competency is affected by partner status as a competitor or noncompetitor.

H₅, which examined the impact of mutual dependence on alliances, was supported in both contexts. This hypothesis was supported in both semiconductor (*b* = .297, *p* < .05) and health care (*b* = .214, *p* = .05) sectors. Overall there is strong support that mutual dependence influences cooperative competency.

H₆, the type of innovation (radical versus incremental), does not appear to affect cooperative competency directly. H₇, that cooperative competency derives from the institutional support accorded to the project, was partially supported (refer to Table 4). Institutional support is reflected in the quality of resources and personnel allocated and the priority accorded to the project by top management. We studied institutional support by examining clarity of agreement about resources to be provided to the project, as well as the (lack of) resistance of senior management to the project. Clarity of agreement about inputs (*b* = .272, *p* < .05) significantly enhances cooperative competency in the semiconductor industry as well as in health care (*b* = .287, *p* < .05). However, lack of resistance from key players did not significantly contribute to cooperative competency in the semiconductor sector. In the health care sector, lack of resistance strongly influences cooperative competency (*b* = .337, *p* < .05). Overall H₇ is supported in both contexts.

H₈ examined the direct impact of complementarity of partner competencies on NPD success. This hypothesis is supported in the semiconductor sector, but results were not statistically significant in the health care context (see Table 5).

In addition, our model implies that the organizational factors posited to affect cooperative competencies affect NPD success through their impact on cooperative competencies; that is, cooperative competency acts a mediator.

As can be seen in Table 6, in both the health care and semiconductor sectors, only cooperative competency had a significant impact on NPD success. In the semiconductor sector type of innovation and in the health care sector lack of resistance had significant but reverse (to what was posited) impact on NPD success. Thus, most antecedents of cooperative competency do not have a direct impact on NPD success and only affect NPD success through their impact on cooperative competency.

Discussion

Nearly 20,000 alliances were formed by U.S. companies between 1988 and 1992 (Pekar and Allio 1994). Given the growing popularity of alliances and the importance of man-

aging the innovation process, this attempt to integrate two different research streams is timely and significant. The central objective was to identify ways in which alliance NPD could be made more successful.

Recap

We find that, irrespective of whether NPD is conducted internally or externally, cooperative competency is an important construct that contributes to NPD success. As hypothesized in H₁, cooperative competency (a combination of trust, communication, and coordination) contributes significantly to new product success for products developed in two distinct contexts: the semiconductor and health care sectors.

The notion of cooperative competency follows from Thompson's (1967) concept of coordination by mutual adjustment. Because it is similar to Cohen and Levinthal's (1990) concept of absorptive capacity and Dyer and Singh's (1998) notion of relational capability, these two constructs may suggest avenues for more sophisticated conceptual development. For example, absorptive capacity illuminates a dimension of the ability of firms to assimilate and make use of information obtained from partners, whereas Dyer and Singh's notion of relational capability reflects the willingness and ability of partners to engage in partnerships. Although more work should be done to delineate the boundaries of cooperative competency, this construct is rich in meaning and can enhance our understanding of partnership arrangements in a variety of contexts.

Cooperative competency is higher in internal than in external NPD projects. These results are consistent with the tenets of institutional economics, namely, that the internalization of complex and difficult-to-monitor activities offers savings on costs of running the system by e-mail. Firms that use interfirm arrangements for NPD should recognize that the promise of synergy, access to resources, or shared risk rests atop a latticework of abilities to cooperate, a latticework that might not be as sound as that which supports interdepartmental efforts.

We do not find support for the conjecture that the mode of governance (internal versus external) moderates the relationship between cooperative competency and NPD success. Table 2 reveals that in both the semiconductor and health care contexts there is a strong correlation between internal and external cooperative competency. This suggests the possibility that, to some extent at least, some firms are better at fostering cooperative competency than others. This would tend to be corroborated by Dyer and Singh's (1998) admonition to develop partnering capability as a strategic asset likely to yield "relational rents." Further research could examine the role of organizational learning, leadership, and culture in fostering cooperative competency.

TABLE 4
Multiple Regression Model of Hypothesized Predictors of Cooperative Competency in Alliances
Standardized Coefficients (t-value) *p*-value

Criterion Variables	Administrative Mechanisms			Competitor/ Noncompetitor	Mutual Dependence	Radical/ Incremental	Institutional Support		R ²	F (<i>p</i>)
	H _{3a} Formalization	H _{3b} Centralization	H _{3c} Clan				H _{7a} Clarity	H _{7b} Lack of Resistance		
Semiconductor (<i>n</i> = 56) cooperative competency	.252 (2.16) <i>p</i> = .018	-.116 (-.942) <i>p</i> = .175	.236 (1.99) <i>p</i> = .026	.037 (.334) <i>p</i> = .37	.297 (2.64) <i>p</i> = .005	-.047 (-.432) <i>p</i> = .66	.272 (2.18) <i>p</i> = .017	.014 (.108) <i>p</i> = .45	.48	5.34 (.000)
Health care (<i>n</i> = 50) cooperative competency	-.064 (-.461) <i>p</i> = .67	-.074 (-.496) <i>p</i> = .32	.257 (1.90) <i>p</i> = .03	not tested	.214 (1.64) <i>p</i> = .05	-.133 (-.989) <i>p</i> = .84	.287 (2.04) <i>p</i> = .023	.337 (2.23) <i>p</i> = .015	.37	3.61 (.004)

Notes: One-tailed *p*-values are reported. Only two of the health care alliances were competitor alliances, and therefore this was not tested. Sample sizes for semiconductor (*n* = 56) because administrative mechanisms were measured only in the main study and not in the pilot study. Also, items with missing values were excluded from the analysis. We obtained similar results when we replaced missing values with means.

TABLE 5
New Product Development Success: Complementarity

	b (t) p	R²	F (p)
Semiconductor NPD success alliance (n = 66)	.345 (2.94) .005	.12	8.63, p = .005
Healthcare NPD success alliance (n = 51)	.116 (.816) .418	.013	.666, p = .418

TABLE 6
Multiple Regression of Direct Effect on NPD Success
Standardized Coefficients

Predictor Variables	
<i>Semiconductor</i> (n = 55) [R ² = .36, F = 2.84, p = .001]	
Cooperative competency	b = .473, p = .003
Centralization	b = .119, p = .80
Formalization	b = -.027, p = .58
Clan	b = -.089, p = .74
Competitor/noncompetitor	b = -.043, p = .64
Radical/incremental	b = -.262, p = .98
Mutual dependence	b = -.065, p = .69
Institutional support (lack of resistance)	b = .161, p = .13
Institutional support (clarity)	b = .142, p = .17
<i>Health care</i> (n = 50) [R ² = .24, F = 1.66, p = .14]	
Cooperative competency	b = .405, p = .01
Centralization	b = -.144, p = .20
Formalization	b = -.013, p = .53
Clan	b = -.068, p = .67
Radical/incremental	b = .088, p = .28
Mutual dependence	b = .02, p = .45
Institutional support (lack of resistance)	b = -.328, p = .96
Institutional support (clarity)	b = .176, p = .14

Notes: One-tailed p-values are reported.

Our analysis of alliances in both the semiconductor and health care industries indicates that cooperative competency can be enhanced by several means. Through their impact on cooperative competency, control mechanisms of the clan type contribute to new product success for projects conducted within alliances. In the semiconductor sector, furthermore, formalization also contributes to NPD success. Plausibly, centralization impairs cooperative competency, but its impact is too subtle to detect in our design without doubling the sample size. This partial support for H₃ suggests that a shared vision of the goals and objectives of those undertaking the project is important to overall project success. We suggest that the mechanism at work is the type of control mechanism. Clan-type mechanisms best reflect a shared vision and values used to guide behavior. Formalization uses explicit procedures to guide behavior. We suspect that formalization in this context is a result of bilateral agreement rather than an imposition by authority. The nature of mutual interdependencies seems to favor the joint coordination observed here.

We were unable to conclude that cooperative competencies are higher in noncompetitor than in competitor al-

liances. H₄ was not supported in the semiconductor sector and could not be tested in the health care sector because only two alliances were identified as competitor alliances. Seemingly, advantages from alliances with competitors (common market understanding and shared product know-how) are offset by the impediments to cooperation (conflict of interest and perhaps a history or culture of rivalry). Alternatively, we may have encountered response effects arising from the phenomenon of local rivals that forge an alliance and no longer regard themselves as competitors.

H₅ provides the expectation of positive association between cooperative competency and mutual dependence by relying on an indicator variable formed from two global measures of dependence. The classification variable shows strong association with cooperative competency in both research contexts. We have compelling evidence for positive effects from mutual dependence on cooperative competency and significant nomological support for the construct of cooperative competency. Our notion of mutual dependence is richer than the notion of power from which it is derived. Although dependence of others on a party is the source of that party's power, it is its dependence on others that reins in its ability to use this power. Asymmetrical dependence or situations in which the parties are not dependent on each other are not conducive to a climate of cooperation. In the former case, the weaker might be guarding against exploitation while the stronger tries to mask or exploit the advantage. In the situation of minimal mutual dependence, the commitment the parties have toward the alliance is absent (Harrigan 1988). It is easier for minimally dependent parties to ignore or walk away from challenges than to hash out the means to continue to cooperate.

Regarding H₆, no significant differences are observed in cooperative competencies in radical versus incremental innovations. But this issue also merits further study. It is possible that, though radical innovations may limit cooperative competencies because of the unpredictability and greater risk of such enterprises, certain countervailing forces may operate to neutralize the tendency to limit cooperation. For example, radical innovation projects tend to be star projects and take longer to complete and thus may provide unique mechanisms for building cooperative competencies. Similarly, participants tend to be more committed to radical innovation projects (Schmidt and Calantone 1998).

Institutional support can help foster cooperative competency, and therefore H₇ is supported. In our study, institutional support was operationalized to include clarity of agreement and lack of resistance from key players in both organizations. We find that clarity of agreement fosters cooperative competency in both semiconductor and health care contexts. Lack of resistance appears to play a greater role in the health care sector. This may be attributed to the

nature of innovations and alliances undertaken by hospitals, which typically engage in alliances to offer new, innovative services that they may not have the resources to offer alone. Resistance from key players may be the major impediment in getting such arrangements off the ground. In the semiconductor sector, lack of resistance from key players is not enough to induce participants to cooperate. Plausibly, organizational forms and cultures vary in their propensity to cooperate. This may be a key antecedent to cooperative competency or a conceptual component to be developed in Dyer and Singh's (1998) notion of relational competency.

As hypothesized in H₈, projects that build on and complement partners' core competencies have a better chance of succeeding than those that do not. The logic of this factor stems from population ecology and learning theory: New systems can impair coordination patterns, and firms enhance survivability by doing what they do best.

An issue to examine is what impact the partnering capabilities of the alliance partners has on the cooperative competency exhibited in the alliance. To put it differently, does high partnering capability of the parties ensure a high cooperative competency, or can high partnering capability of partners go hand-in-hand with low levels of cooperative competency? We conjecture that high partnering capability would involve, among other things, knowledge of Figure 1 (selecting the right kind of partner, using appropriate administrative mechanisms, and providing appropriate institutional support), which would foster greater cooperative competency.

But high partnering capability alone will not ensure high levels of cooperative competency and NPD success. It is possible for two units with high partnering capabilities to exhibit low cooperative competency due to the dynamics and characteristics of the interfacing units because the locus of cooperative competency is of the dyad. The alliance will have an organizational culture and characteristics distinct from the organizational culture of the firms that are parties to the alliance. Partnering capability will interact with other variables that might impinge on cooperative competency. These variables might include ability: Does the partner deliver and bring to the table what it promised? External pressures and environmental factors also might affect cooperative competency. We have studied this problem from a static as opposed to dynamic, longitudinal perspective, and this is something worth addressing in additional research.

We might conjecture that partners with low cooperative competency are doomed to fail. In the case in which one partner has high partnering capability and the other has low, the party with high partnering capability might be able to use these skills to salvage the alliance, perhaps schooling its counterpart on communication, forthrightness, and the requisite roles.

Managerial Implications

Innovations conducted internally have higher cooperative competencies and NPD success rates than those conducted by alliances. Thus, though external NPD projects may allow for greater access to resources and spread out risks (by sharing resources), such projects have lower success rates. Alliance NPD projects should focus on ways to improve co-

operative competencies in innovation projects and, consequently, to enhance the success of these projects. Clarity of agreement, engaging in mutually dependent partnerships, and fostering clan and formalized relationships are some mechanisms that organizations must pursue to maximize the chances of successful NPD in alliances. As Bidault and Cummings (1994) suggest, some of the variables that limit cooperative competency, and consequently NPD success, seem related to the increased managerial hurdles and project costs that tend to characterize alliances. These managerial hurdles can include reduced project speed, increased costs of coordination, and reduced new product success. They derive from lack of flexibility of those involved with the project (centralization), conflicting priorities of senior management personnel within the companies (lack of adequate top management support), and a champion unable to influence personnel and systems in both organizations. Institutional support was among the key drivers of cooperative competency and merits further study.

Although clear agreements, clans, formalization, and mutually dependent relationships directly affect cooperative competencies, these variables by themselves do not have a direct impact on NPD success in either the semiconductor or health care contexts. Thus, the key to NPD success in alliances seems to be to build cooperative competencies. The key to building cooperative competencies is to have clear-cut agreements, use clan and formalized control mechanisms, and engage in partnerships that pivot on mutual dependencies.

While examining the antecedents or key drivers of cooperative competency, we focused on alliance-based innovation. Our study does not examine the antecedents of cooperative competency in internal NPD projects. However, we believe that the same variables found to affect cooperative competency in alliance-based projects (administrative mechanisms, institutional support, and mutual dependence) are likely to affect cooperative competency in internal NPD projects.

Limitations

This study used the key informant method. Limitations of the key informant method have been documented elsewhere (Philips 1981). Our respondents (senior R&D personnel in semiconductor firms and chief administrators of hospitals) were well qualified to answer the research questions. But talking to more than one informant within each organization might have yielded additional insights on interdepartmental interactions during the NPD process. In the case of alliances, we interviewed one partner in the alliance. Talking to both partners, though a logistical challenge, would have yielded richer insights and provided a more complete and balanced picture.

The alliances were evaluated after the fact by respondents. The study is based on the assumption that trust, communication, and the other variables studied lead to new product success. We might make a case for the reverse, that success could have led to inferences about trust and other variables studied (see Ganesan 1994). We attempted to control for this by trying to introduce variability in the type of project selected. Respondents were asked to select the pro-

ject that came to their attention most recently, not just successful, unsuccessful, or typical projects. However, it is possible that successful projects carry with them a halo of good feeling, which could explain the relationship between cooperative competency and NPD success.

The overall sample size of the study was limited for the health care context. In retrospect, because it would have been more meaningful to have fully matched comparisons of internal versus external alliances in two contexts, we lament our inability to secure the resources for a full replication in the health care sector. Finally, most of our measures performed well, but a different approach to measuring the environment and top management support might have yielded additional insights.

Directions for Research

Studies in NPD can be classified as (1) generalist studies that identify key variables that contribute to the success and failure of NPD projects or (2) specific studies that examine in depth one or more variables identified by the generalist studies (Craig and Hart 1992). This research follows the generalist style, in that it has tested a broad set of variables that contribute to the success and failure of NPD carried out under technology alliances. Substantive issues must be tackled in future studies of both types. For example, how can asymmetrically dependent alliances be made to work for either or both partners? Can information technologies or third parties enhance cooperative competency in alliances? What

about transnational alliances? Is a more detailed development and analysis of the cooperative competency construct a prerequisite for cross-cultural studies? What prompts alliance partners to use certain types of administrative mechanisms and not other types? Can we find other key drivers of cooperative competency in internal NPD projects? Do other factors impede development of cooperative competency? Bleeke and Ernst (1995) contend that unbalanced power and competitor alliances are doomed to fail. However, because of the sparkling promise of differential advantages, many organizations are charmed into such alliances. Future research efforts should focus on partner selection mechanisms undertaken by companies and on the ways organizations can improve the performance of competitor and unbalanced power alliances.

We also recommend that future studies focus on the favorability of the environment rather than on mere knowledge of environmental conditions. If it is a less than munificent environment that draws companies to form alliances, an understanding of the impact of environmental factors on the behaviors of partners when they form an alliance would be valuable. Other issues include how prior experience with partnerships influences alliance management and what effects various structural arrangements (e.g., alliance located at own company or partner's site, equity partnering, contractual elements, communication systems) have on the success of technology alliances. The work ahead calls for many hands.

APPENDIX **Measures Used**

Cooperative Competency

Trust Items

Had the ability to contribute to the NPD effort.
Was capable of doing their part.
Had high integrity.
Could be counted on to do the right thing.
Motives could never be questioned.
We trusted that they would act in company's best interests.

Communication Items

Alliance partner informed us of changing project needs.
Partner shared proprietary information with us.
Partner provided information that would help us.
Alliance partner provided us with adequate information.
Alliance partner provided us with timely information.

Coordination Items

The different job and work activities around the new product development activity fit together very well.
People from different organizations who had to work together did their jobs properly and efficiently.
All related things and activities were well timed in the everyday routine of the innovation process.
The work assignments of the people from the different organizations who worked together were well planned.
In general, the routines of the different organizations that had to work with one another were well established.

Institutional Support

Clarity of Agreement

The amount of financial resources each partner in the alliance was expected to contribute toward the new product development effort was clearly laid out.
The amount of manpower each partner in the alliance was expected to contribute toward the new product development effort was clearly laid out.

Resistance from Key Players

There was no resistance to this alliance from key players in your organization.
There was no resistance to this alliance from key players in your alliance partner's organization.

Complementarity with Partner Competencies

In retrospect, there was a good match between your company's objectives for developing the new product and that of your partner's in developing the new product.
The product development effort benefited from its closeness to both company's existing products.

Mutual Power Dependence

My alliance partner provided vital resources I would have found difficult to obtain elsewhere.
Much of the success or failure of the new product development effort can be attributed to my alliance partner.
It would have been difficult to replace my alliance partner.
The new product development effort would have suffered greatly if I had lost my alliance partner.

APPENDIX Continued

Radical/Incremental

This was a unique new product project that did *not* directly build on technology of an existing product line.
This project capitalized on existing technology but represents a significant extension of technology existing within the company.
The product was pioneering, first of its kind (e.g., the first PC, portable stereo, or diet soda ever introduced in the market).
Similar products were available in the market when we introduced our product into the market.

NPD Success

Product had superior quality and reliability.
Product was killed, never went to the market.
Product was released on time.

(How would you rate the product on):

Time taken to introduce product into the market (idea to market).
Meeting of target costs.

Centralization

Problems in alliances are resolved hierarchically.
Even small matters in the alliance must be referred to someone higher up for an answer.

Formalization

We rely extensively upon contractual rules and policies in controlling day-to-day operation of the alliance.
We follow written procedures in most aspects of business in the alliance.

Clan

We trust the values and experiences of alliance members in controlling day-to-day activity.
We rely upon common values to guide day-to-day performance by alliance members.

Notes: All measures were parallel phrased for internal and external NPD. All items were phrased in a Likert-type ("strongly agree" to "strongly disagree") five-point scale format except the last four NPD success items, which were measured on a five-point ("very successful" to "very unsuccessful") scale.

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Antecedents and Consequences of Marketing Managers' Conflict-Handling Behaviors

In this study, the authors develop and test a cross-cultural conceptual model of the organizational-based antecedents and consequences of marketing managers' conflict-handling behaviors during the new product development process. The hypotheses were tested using data collected from 968 companies in Japan, China (Hong Kong), the United States, and the United Kingdom. The results provide some interesting insights regarding the varying role of conflict management among diverse cultures.

Increased interest in the concept of dynamic knowledge creation (Nonaka 1994) has given many companies momentum to turn away from a traditional information-processing view and adopt instead an information- or knowledge-creation/control perspective (Nonaka 1994). The new paradigm mandates a strong management role in establishing the foundation of knowledge creation during the new product development (NPD) process. Moorman (1995) suggests that NPD can be viewed as a process of organizational learning involving the acquisition, dissemination, and utilization of information. This dynamic information environment fuels efforts to pursue the acquisition, dissemination, and use of all information, including that created by conflict. This new paradigm helps managers move from a cross-functional integration and conflict-elimination perspective to a creative conflict perspective in NPD knowledge creation.

Considerable research demonstrates that cross-functional integration contributes vital and value-added activities to the NPD process, thereby providing the fundamental building blocks of knowledge creation (Griffin and Hauser 1992; Ruekert and Walker 1987a, b). Yet this knowledge-creating process inherently competes with the firm's status quo (Pascalle 1990), producing conflict stemming from general discomfort with change, vested political interests, organizational inertia, and the ownership of ideas. This conflict and the ways to manage it may be affected by several other complex variables, especially if companies and their personnel span multiple cultures. Managers must direct cross-functional

tension and conflict skillfully, because otherwise the transfer of knowledge that is essential to organizational learning breaks down (Griffin and Hauser 1993; Nonaka 1994; Song and Parry 1997a, b).

Despite a rich literature base in conflict management, several gaps remain. First, though there is much research on conflict in the management area, there is very little in marketing. This study pertains to one set of marketing control variables, conflict behaviors, which, despite their potential to create competitive advantage, so far have been overlooked. Second, though there are studies that examine preference for and/or the effect of certain conflict behaviors in the management literature (e.g., Rahim 1986; Xie, Song, and Stringfellow 1998), they do not examine any antecedents of the conflict behaviors. Third, no empirical studies have compared the antecedents and consequences of conflict-handling behaviors across multiple countries. Nakata and Sivakumar (1996) observe that more cross-national comparisons of Eastern and Western business practices are needed in marketing. Research of this nature often is called for in both marketing and management literature but is rarely conducted. Our focus on two Eastern and two Western countries addresses this gap in the cross-cultural literature. Fourth, despite substantial research on general cross-functional disharmony (Dyer and Song 1997; Ruekert and Walker 1987a), the marketing literature currently offers little prescriptive advice in the use of creative conflict. By exploring the associations between conflict behaviors and strategic variables and performance, our study helps build a foundation for such advice as well as for future theoretical development.

To explore these concerns, we begin with a theoretical model that links the following key organizational variables: marketing's conflict behaviors, marketing's integration with research and development (R&D) and manufacturing, and firm performance. We test our hypotheses by collecting empirical evidence from 968 marketing managers in Japan, China (Hong Kong), the United States, and the United Kingdom.

X. Michael Song is Professor of Marketing, The Eli Broad Graduate School of Management, Michigan State University. Jinhong Xie is Assistant Professor of Marketing, Warrington College of Business Administration, Marketing Department, University of Florida. Barbara Dyer is Assistant Professor of Marketing, College of Business, Department of Marketing, Ohio University. The authors thank three anonymous *JM* reviewers for their thoughtful comments and detailed suggestions on two previous versions of this article. The authors acknowledge the financial support from Marketing Science Institute, the 1998 Broad College Summer Research Grant, and the 1998 Warrington College Summer Research Grant.

Conceptual Framework and Research Hypotheses

The Theoretical Framework

In Figure 1, we present a theoretical framework based on the new paradigm by which conflict research might be expanded to provide better and more useful information about both effective conflict behaviors and application strategies. The model includes three components. The first describes the influence of key organizational variables on two of marketing's conflict behaviors (avoiding and collaborating), the second describes the effects of these two conflict behaviors on cross-functional integration, and the third component shows the effect of cross-functional integration on new product success and financial performance. We discuss each part of the model next and then present our hypotheses.

Antecedents of conflict behavior. Despite an early focus on the causes of conflict and its resolution, research on the antecedents of conflict handling behaviors has lagged (Lewicki, Weiss, and Lewin 1992). We seek to fill this gap in the literature by positing five antecedent variables (Figure 1) that represent three basic issues in a firm: (1) cross-functional goal and value differences, (2) management style choices, and (3) the use of human resources.

We selected these most interesting and important constructs for their empirical testability, ability to stimulate testable hypotheses for further research, and acknowledged status as strong influencers of organizational behavior

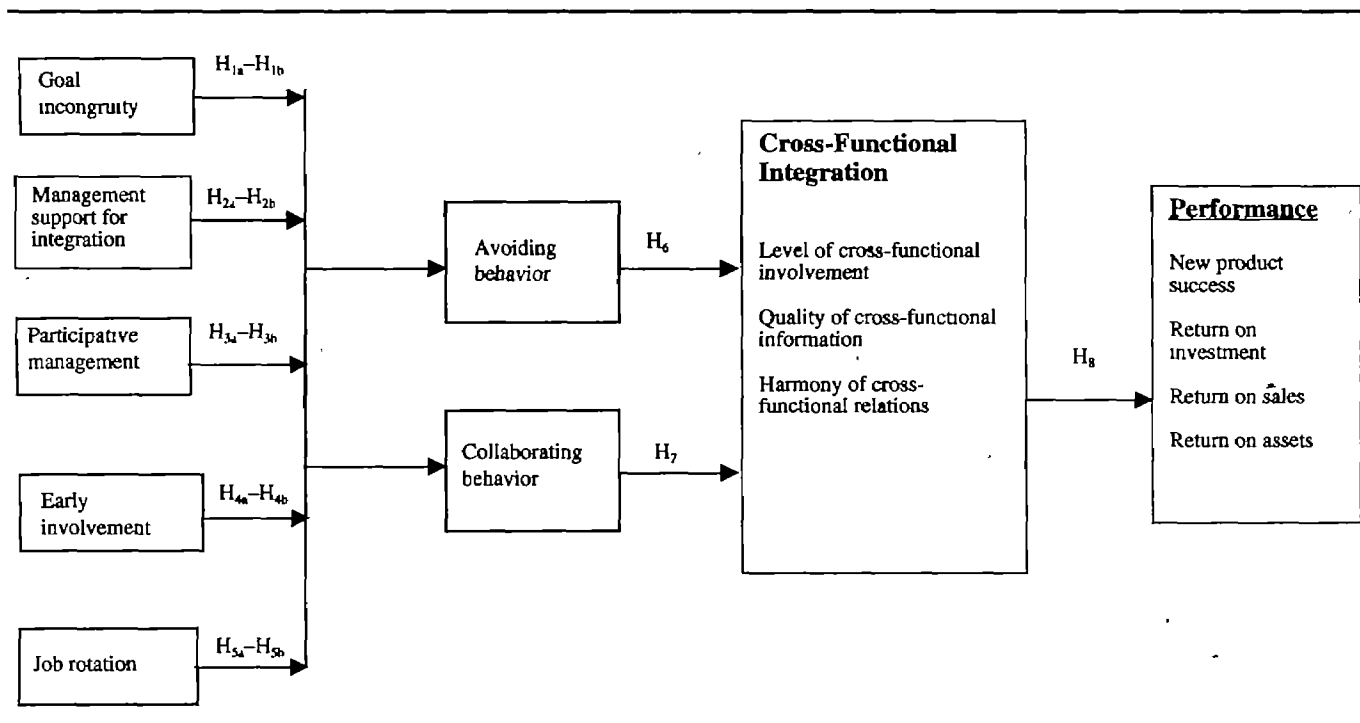
(Zaltman, LeMasters, and Heffring 1982). First, as to goal incongruity, extensive studies by Miles and Snow (1978) explore its influence, as well as that of management style choices, on conflict behaviors and firm performance. Empirical studies by Pinto, Pinto, and Prescott (1993) have shown that goal incongruity causes intergroup conflict that may be reduced by the introduction of superordinate goals.

Second, as to the next two antecedents (management support for cross-functional integration and participative management), both of which pertain to management style, the management literature has shown their influence on organization behaviors. Van de Ven (1986) finds top management support to be vital to a climate favorable to innovation, and research by Ford and Randolph (1992) suggests that successful cross-functional participative management is important to cross-functional integration.

Third, in terms of the role of job rotation, research has shown that human resource management improves flows across functional boundaries and reduces interdepartmental conflict (Roberts 1987) and that job rotation stimulates cooperation (Griffin and Hauser 1996; Parry and Song 1993) and fosters cross-functional harmony. Although the literature has demonstrated the relevance and importance of these antecedents to performance, little is known about their direct impact on marketing managers' conflict-handling behaviors.

Our model does not incorporate antecedent personality variables, because we believe conflict is conceptualized best as arising from task issues in the organization, not from per-

FIGURE 1
A Model for Studying the Antecedents and Consequences of Marketing Managers' Conflict Behaviors and Cross-Functional Integration



sonality differences. Likewise, the model does not include environmental factors, generally viewed as uncontrollable variables, because they are of limited interest to marketing managers.

Marketing managers' conflict behaviors. Organizational research distinguishes two major approaches to conflict handling: behavioral and structural (Rahim 1979; Rahim and Bonoma 1979). As to the first, research has identified five possible conflict-handling behaviors, or styles, based on a two-dimensional conflict model (Thomas 1976). These behaviors are classified along two basic orthogonal dimensions: "assertiveness—the extent to which the party attempts to satisfy his or her own concerns; and cooperativeness—the extent to which the party attempts to satisfy the other's concerns" (Thomas 1992, p. 668). High assertiveness/low cooperativeness results in a competing style, low assertiveness/low cooperativeness in an avoiding style, moderate assertiveness/moderate cooperativeness in a compromising style, low assertiveness/high cooperativeness in an accommodating style, and high assertiveness/high cooperativeness in a collaborating style (Thomas 1976).

Our study explores the marketing managers' conflict behaviors, based on our field research, relevant to a comparison of Eastern and Western business practices: avoiding and collaborating. *Avoiding* behavior is defined as the extent to which the marketing manager avoids the conflict or ignores disagreements among different functions; *collaborating* is defined as the extent to which the marketing manager seeks the common interests of all functions to achieve an integrative solution (Rahim 1983). We chose to explore the collaborating construct among three cooperative conflict behaviors (collaborating, accommodating, and compromising) because collaborating represents the ideal in conflict behavior, according to the management literature (Lewicki, Weiss, and Lewin 1992; Tjosvold 1991). Of the two uncooperative conflict behaviors (forcing and avoiding), we chose to explore avoiding behavior because it has been suggested as the predominant conflict approach in collectivist societies such as Japan and China (Hong Kong) (Dyer and Song 1997; Gregory 1983), which tend to eschew confrontational approaches.

Cross-functional integration and performance. We extend the cross-functional literature by conceptualizing cross-functional integration as three conceptually related components: level of cross-functional involvement, quality of cross-functional information, and harmony of cross-functional relationships. *Level* of cross-functional involvement refers to the degree of coordination among marketing, R&D, and manufacturing in analyzing market opportunities, visiting potential major customers, and establishing the commercial direction of NPD. *Quality* of cross-functional information refers to the accuracy, promptness, and timeliness of information exchanged among the three areas. *Harmony* of cross-functional relationships refers to the degree of communication, interaction, and collaboration among the areas and their general sense of responsibility and satisfaction with relations. Finally, the model conceptualizes business performance as both new product success and objective fi-

nancial performance, such as return on investment (ROI), return on sales (ROS), and return on assets (ROA).

Hypotheses for Antecedents of Marketing Managers' Conflict Behaviors

Goal incongruity. For this study, *goal incongruity* is defined as the basic difference within the firm between marketing's goals and values and those of the R&D and manufacturing departments. The level of incongruity in these goals may affect marketing managers' conflict behaviors in several ways. First, a high level of goal incongruity generally leads to a high level of cross-functional conflict and open hostility (Pinto, Pinto, and Prescott 1993; Rahim 1986). When marketing's goals differ greatly from those of R&D and manufacturing, marketing may presume that the others' progress interferes with its own, and therefore it has little incentive to cooperate (Dyer and Song 1997; Tjosvold 1991). When the incentive to cooperate is low, we expect little collaborating and much avoiding, as described in the well-known two-dimensional conflict model mentioned previously (Thomas 1976, 1992). Second, high goal incongruity may make consensus so costly in time, effort, and resources that marketing may choose to avoid the conflicts altogether. Because goal incongruity decreases the incentive of resolving cross-functional conflicts actively and cooperatively, we expect it to be related positively to avoiding behavior and negatively to collaborating behavior. Formally,

- H₁: The greater the goal incongruity, (a) the higher the likelihood that marketing managers will use avoiding behavior and (b) the lower the likelihood that marketing managers will use collaborating behavior.

Management style choices. Two constructs are used to capture management style choices: senior management support for integration and participative management. When senior management provides clear objectives and appropriate organizational structures, it increases the chances that cross-functional integration efforts will succeed. Such support works not only by providing necessary financial and political resources but also by signaling that the organization values cooperation (Brown and Eisenhardt 1995). This provides incentive for functions to confront cross-functional conflicts rather than ignore them and to seek collaborative solutions rather than pursue a single function's objectives. Supportive management also provides ample opportunities for marketing to interact with R&D and manufacturing and, in general, creates an environment that directly facilitates collaborating behavior and discourages avoiding behavior. Thus, we expect that

- H₂: The greater the management support for cross-functional integration, (a) the lower the likelihood that marketing managers will use avoiding behavior and (b) the higher the likelihood that marketing managers will use collaborating behavior

As to the second variable, participative management, when employees are encouraged to participate in the company decision-making process, conflicts are resolved more easily (Dyer and Song 1997). By encouraging people in all areas to suggest new product ideas and participate in deci-

sion making, managers increase employee "ownership" of NPD success. This ownership motivates people with different backgrounds and responsibilities to confront conflicts rather than passively avoid them and to collaborate with others for overall success rather than pursue their own functional objectives. Therefore, we predict that

- H₃: The greater the use of participative management, (a) the lower the likelihood that marketing managers will use avoiding behavior and (b) the higher the likelihood that marketing managers will use collaborating behavior.

Use of human resources. Two constructs are used to capture the effective use of human resources: early involvement and job rotation. Early involvement refers to the participation of marketing, R&D, and manufacturing in the early stages of the NPD process, such as strategy formulation, new product idea generation, and new product project selection. Early participation leads all three functions to share commitment to and responsibility for projects (Pinto, Pinto, and Prescott 1993). These shared commitments and responsibilities form a bond among personnel, motivating them to resolve conflicts and cooperate rather than avoid or ignore disagreements or seek their own interest at the cost of the others. Stated formally,

- H₄: The greater the early cross-functional involvement in the NPD process, (a) the lower the likelihood that marketing managers will use avoiding behavior and (b) the higher the likelihood that marketing managers will use collaborating behavior.

Job rotation means rotating employees across the marketing, R&D, and manufacturing departments to develop job capabilities. The extent to which a marketing manager uses a given type of conflict resolution is affected not only by the marketing manager's incentive to do so but also by his or her cost in doing so. The more difficult it is to deal with cross-functional conflict, the more likely the manager will withdraw from the issue rather than collaborate on it. Moving personnel across functions offers marketing people opportunities to interact with colleagues of different background, expertise, and professional orientation. This rotation helps them understand one another's "thought worlds" (Dougherty 1992) and promotes professional and personal relationships across functional boundaries (Griffin and Hauser 1996). This in turn eases the communication process and reduces the difficulties in conflict management; it helps marketing managers deal with conflict in an active (rather than passive) and cooperative (rather than hostile) manner. On the basis of these discussions, we hypothesize that

- H₅: The greater the use of job rotation, (a) the lower the likelihood that marketing managers will use avoiding behavior and (b) the higher the likelihood that marketing managers will use collaborating behavior.

Hypotheses for the Consequences of Marketing Managers' Conflict Behaviors and Cross-Functional Integration

Research indicates that cross-functional conflicts (with either positive or negative outcomes) can affect cross-functional integration efforts in the firm (Ruekert and Walker

1987a) and, more specifically, that collaborating leads to positive outcomes and noncollaborating to negative outcomes (Tjosvold 1991). In our proposed model, cross-functional integration is measured by the level of cross-functional involvement, the quality of cross-functional information, and the harmony of cross-functional relations. When functions involved in NPD avoid dealing with interface problems, they tend not to interact or communicate across functional boundaries and therefore know little about the needs and concerns of other functions (Dyer and Song 1997). They are thus unlikely to provide timely, prompt, or accurate information for the other functions. If cross-functional conflicts are avoided or ignored, functions care less about one another's interests and thus fail to participate in open and satisfying cross-functional relations or conduct joint activities. Thus, we conjecture that

- H₆: The greater the use of avoiding behavior, the lower the level of cross-functional integration.

Conversely, when functions deal with cross-functional conflict collaboratively, they tend to understand other functions' needs, concerns, and perspectives and successfully communicate their own. This increased level of interaction and information across functional boundaries facilitates the cross-functional relations, increases the quality of cross-functional information, and enhances the harmony of cross-functional relations. Thus, we predict that

- H₇: The greater the use of collaborating behavior, the higher the level of cross-functional integration.

Research in both marketing and management provides strong support for a positive link between cross-functional integration and performance (for a recent review, see Griffin and Hauser 1996). To be complete, we follow the literature and test the following conventional hypothesis:

- H₈: The greater the cross-functional integration, the higher the firm performance.

Hypotheses for Cross-National Differences

Tse and colleagues (1988) asked, "Does Culture Matter?" Their answer, and the answer of many other researchers, has been yes (see also Nakata and Sivakumar 1996). National culture, the human side of business, affects individual and organizational behavior in so natural a way that people and organizations are often unaware of its influence. Consequently, without empirical examination, we cannot be sure whether aspects of organizational theories developed in one culture are applicable in another (Hofstede 1994). In this section, we challenge the cultural sensitivity of our conceptual framework. More specifically, we examine the possible cultural differences in the effectiveness of some key organizational variables in determining marketing managers' conflict behaviors.

Behavioral theorists have identified several kinds of cultural difference (Hofstede 1980, 1994; Lomax and Berkowitz 1972; Triandis 1972). In the most well-known examinations of these studies, Hofstede (1980, 1994) identifies five dimensions that vary by culture: individualism, or the degree to which people prefer to act as individuals rather

than as members of groups; uncertainty avoidance, or the degree to which people prefer structured to unstructured situations; power distance, or the degree to which inequality of power is regarded as normal in the culture; masculinity, or the degree to which values associated with the role of men (such as assertiveness and success) prevail over values associated with the role of women (such as quality of life and solidarity); and long-term orientation, or the degree to which values are oriented to the future rather than the present and past.

Despite increased interest in the influence of cross-cultural differences on marketing practices, few have studied the influence of national culture on marketing's conflict behaviors in either marketing or management literature. However, recent cross-culture conflict studies have provided some preliminary empirical evidence of cultural differences in conflict behavior preferences. For example, in dealing with interpersonal conflict, Chinese and Japanese appear to use a conflict avoidance style more than Americans do (Ohbuchi and Takahashi 1994; Ting-Toomey et al. 1991). Empirical results of the effect of culture on the preference for a collaborating style have led to mixed results (e.g., Nomura and Barnlund 1983). Although these studies have demonstrated that culture affects the preference for certain conflict behaviors, they do not examine any antecedents of the conflict behaviors, nor do they investigate how antecedents and consequences of conflict behaviors may differ across cultures. Also, most studies have focused on interpersonal rather than organizational conflict, and researchers often pursue these studies in the laboratory rather than in the field. In this research, we propose that differences in national culture modify the hypothesized relationships between marketing managers' conflict behaviors and the three organizational factors (goal incongruity, management support for cross-functional integration, and participative management). We develop six specific hypotheses next.

Cross-national differences in the effects of goal incongruity. We stated previously that goal incongruity relates positively to avoiding behavior and relates negatively to collaborating behavior (H_1). We further suggest that the individualism versus collectivism culture dimension moderates the effect of goal incongruity on these two conflict behaviors. In a collectivist culture, individuals view themselves as part of a group rather than as distinct persons and give priority to their collective goals (Gregory 1983; Wagner 1995). Thus, in the NPD process, even if the functions involved have different goals and objectives, the collective culture norm will still provide incentives for individuals to confront conflicts and to seek integrated solutions for the well-being of the organization as a whole (Gregory 1983; Triandis, Bontempo, and Villareal 1988; Wagner 1995). Collectivist culture therefore offsets the effect of goal incongruity on marketing's conflict behaviors.

In contrast, the individualistic culture's emphasis on individual accomplishments and interests (Hofstede 1980, 1994) motivates individuals to avoid conflicts and pursue self-interest rather than the collective good. In this sense, individualistic culture magnifies the positive effect of goal incongruity on avoiding behavior and the negative effect of goal incongruity on collaborating behavior. Hofstede (1980)

derives the scores of the five dimensions on the basis of a 40-country empirical study. The scores ranged between 0 and 100, and higher numbers suggest stronger levels of the dimension. Considering the low score on individualism in Japan (46) and China (Hong Kong) (25) and the high score in the United States (91) and the United Kingdom (81), we propose that

H_{9a} : The positive effect of goal incongruity on the use of avoiding behavior is stronger in U.S. and U.K. firms than in Japanese and Chinese (Hong Kong) firms.

H_{9b} : The negative effect of goal incongruity on the use of collaborating behavior is stronger in U.S. and U.K. firms than in Japanese and Chinese (Hong Kong) firms.

Cross-national differences in the effects of management support for integration. Management support for integration derives its potential influence on individuals' conflict behaviors from management authority. The strength of this influence therefore depends on how authority is viewed in the culture. In cultures with a high power distance, human relationships are based largely on a person's hierarchical position and status, and the obedient behavior of subordinates is expected (Hofstede 1980, 1994). In the NPD process, an authoritarian national culture may strengthen the influence of senior management attitudes on individual behaviors in dealing with cross-functional conflicts. Thus, we expect a stronger effect of senior management support for integration on avoiding and collaborating behaviors in cultures with a higher power distance than in cultures with a lower power distance. A higher power distance is observed in Japan (54) and China (Hong Kong) (68) than in the United States (40) and the United Kingdom (35), which suggests a stronger effect of top management support for cross-functional integration on the ways that people handle conflicts in the two Asian countries than in the two Western countries.

This rationale is also consistent with the interesting and relevant cultural dimension of tight versus loose cultures suggested by Triandis (1989). Triandis argues that, in a tight culture, society is relatively homogeneous. The culture forms and imposes clear norms and administers severe sanctions to those who deviate. In a loose culture, society is more heterogeneous. It lacks clear norms and tolerates more deviance from normative behaviors. A combination of high power distance and tight culture may amplify the impact of top management attitudes on marketing's conflict behaviors. In such a culture, top management may define normative behaviors. Because Japan and China (Hong Kong) are considered tight cultures and the United States and United Kingdom loose cultures (Triandis 1989), the effect of top management on marketing's conflict behaviors could be much stronger in Japanese and Chinese (Hong Kong) firms than in U.S. and U.K. firms, in which power distance is low and the culture is very loose. Thus, we hypothesize that

H_{10a} : The negative effect of management support for cross-functional integration on the use of avoiding behavior is stronger in Japanese and Chinese (Hong Kong) firms than in U.S. and U.K. firms.

H_{10b} : The positive effect of management support for cross-functional integration on the use of collaborating behav-

ior is stronger in Japanese and Chinese (Hong Kong) firms than in U.S. and U.K. firms.

Cross-national differences in the effects of participative management. As we discussed previously, participative management affects marketing's conflict behaviors because it tightens the connection between employees and the organization, which motivates employees to deal with interface problems and collaborate for the success of the organization. The positive effect of participative management may differ across cultures with different views of the self. Social psychology literature has defined two divergent concepts of the self: an independent and an interdependent view (Markus and Kitayama 1991). The independent view of the self considers the self an autonomous, separated, independent person; the interdependent view considers the self part of the social context and connected to others. Because participative management helps build connections between individuals and the social environment, its effect will be stronger in cultures that emphasize the independent self than in cultures that emphasize the interdependent self, due to diminishing effects. Research in social psychology has suggested that Western cultures (United States and United Kingdom) tend to be characterized by the independent view of the self and Eastern cultures (Japan and China) by the interdependent view (Bond 1986; Markus and Kitayama 1991). Thus, we hypothesize that

H_{11a}: The negative effect of participative management on the use of avoiding behavior is stronger in U.S. and U.K. firms than in Japanese and Chinese (Hong Kong) firms.

H_{11b}: The positive effect of participative management on the use of collaborating behavior is stronger in U.S. and U.K. firms than in Japanese and Chinese (Hong Kong) firms.

Research Method

Data Collection

The sampling frame for China (Hong Kong), the United Kingdom, and the United States consisted of all nonservice firms listed in the *World Business Directory*. The Japanese sampling frame consisted of all public nonservice firms listed in the *Japan Company Handbook*. A presurvey was conducted to ensure that the final samples would be comparable across the four samples and gain firms' tentative commitment to participate in the study (78 firms declined to participate because of company policy). We then randomly sampled 500 Japanese firms, 500 U.S. firms, 500 U.K. firms, and 300 firms from China (Hong Kong) (with appropriate industry stratification to match the samples) using a procedure adapted from the total design method to administer the survey (Dillman 1978). After four follow-up letters and multiple faxes, we received usable questionnaires from 968 marketing managers (295 firms in Japan, 126 firms in China (Hong Kong), 300 firms in the United States, and 247 firms in the United Kingdom).

Measurement Development and Validation

To carry out our study, we selected existing scales for measuring the five antecedent constructs, marketing's conflict behaviors, and firm performance. Unfortunately, cross-func-

tional integration and early cross-functional involvement scales were not available in the literature. To deal appropriately with an international sample and ensure cross-national construct equivalence (functional, conceptual, and instrument equivalence) in the final instrument, we followed a procedure for conducting international research. The procedure consists of the following six steps:

1. We reviewed the existing literature and generated a large pool of measurement items for scales designed to measure the constructs examined in this study.
2. We conducted field research interviews to assess the validity of the generated items and produce additional items. The field research was also designed to assess functional, conceptual, and instrument equivalence.
3. Using the items generated from the first two steps, we divided the items into subsets of the measures that were unique and possessed "different shades of meaning" (Churchill 1979).
4. We submitted a list of constructs and corresponding measurement items to 35 individuals to evaluate critically each item for clarity, specificity, and representativeness.
5. On the basis of feedback from the panel members, we prepared the English version of the questionnaire and then used two parallel translation/double translations to translate the English version of the questionnaires into Chinese and Japanese.
6. The resulting questionnaires were pretested using 12 bilingual MBA students from two well-regarded U.S. business schools and the participants in the field research mentioned in step 4. After the pretests, measures were modified, and the instruments were drafted professionally.

To assess discriminant validity and dimensionality of the constructs country by country, we performed a series of confirmatory factor analysis (CFA) models with LISREL 8 using the covariance matrix of the items as input. We performed four separate measurement models: goal incongruity, management style choice (including two constructs: top management support for integration and participative management), human resources (including two constructs: early involvement in NPD and job rotation), and performance (including two constructs: cross-functional integration and new product success).

The overall fit indices for all models exceeded the critical level (.90) cited by Bearden, Sharma, and Teel (1982), which demonstrates that all models were adequate. Furthermore, because no confidence intervals of the ϕ values for the measurement models contained a value of 1 ($p < .05$), we concluded that the constructs possessed discriminant validity (Anderson and Gerbing 1988; Durvasula et al. 1993). Examination of the standardized loadings showed that all factor loadings were significant ($p < .01$); the smallest t-values were 3.66 for Japan, 2.5 for China (Hong Kong), 3.77 for the United States, and 3.77 for the United Kingdom, which supports the dimensionality of the constructs in all four samples.

Assessment of Construct Equivalence

Having made every effort to ensure construct equivalence through field research, we also explored empirically the degree of our success in eliminating offending items (i.e., items that did not meet the equivalence tests). To assess the construct equivalence across the four samples, we performed

a series of four-group CFA models in which the sample of each country served as a group (Calantone, Schmidt, and Song 1996; Durvasula et al. 1993). In each case, we compared a constrained model, in which the factor loadings are fixed to be equal across the four samples, with an unconstrained model, in which the factor loadings are allowed to vary across samples. The equivalence of factor structure can be established if the fit of the unconstrained model measured by χ^2 does not differ significantly from the fit of the constrained model (Durvasula et al. 1993; Netemeyer, Durvasula, and Lichtenstein 1991). The results of these construct equivalence tests indicate that the differences between the two estimates are not significant for all four measurement models tested, which suggests that the pattern of factor loadings is invariant across the four samples (Calantone, Schmidt, and Song 1996; Durvasula et al. 1993). Therefore, we conclude that there is empirical evidence of cross-national construct equivalence for the final measurement items.

Measures

The Appendix provides the construct reliabilities, response format employed in the questionnaire, and sample measurement items used in this study. A detailed measurement appendix is available from the authors on request. Table A1 contains the mean and standard deviation for each construct.

Antecedents of marketing's conflict handling behaviors.

The goal incongruity scale includes three items that assess differences in goals and objectives, time orientations, and decision-making criteria. The five-item senior management support for integration scale assesses appropriate organizational structure; formal promotion of integration; socialization opportunities for marketing, R&D, and manufacturing; clear objectives; and interfunctional consensus. These items were drawn from Parry and Song (1993). The five-item participative management scale assesses commitment to participative management, acceptance of idea input, employee empowerment, fair evaluation of good ideas, and acceptance of good ideas. We developed the early involvement scale items from our field research. This ten-item scale assesses the involvement of marketing, R&D, and manufacturing in planning and formulating goals, generating new product ideas, and selecting NPD projects. Finally, we measured the job rotation variable with two items that assessed planned job rotation and the inclusion of marketing, R&D, and manufacturing in those efforts.

Marketing's conflict behaviors. In accordance with the knowledge creation focus of the study, the two-item collaborating scale assesses the completeness of information exchange in conflict management and the emphasis on common interests. The two-item avoiding scale assesses avoidance of confrontation and disagreement. These measures were adopted from Rahim (1983). The correlation between the collaborating and avoiding conflict behaviors is -0.27 in Japan, -0.06 in China (Hong Kong), -0.08 in the United States, and -0.18 in the United Kingdom. These correlations and the CFA results provide evidence of the discriminant validity between these two constructs.

To increase the insights of the empirical findings, the extent of cross-functional integration is assessed by three

conceptually and empirically distinct components: level of cross-functional involvement, quality of cross-functional information, and harmony of cross-functional relations. The seven-item scale of the level of cross-functional involvement assesses the degree of coordination among marketing, R&D, and manufacturing in analyzing market opportunities, visiting potential major customers, and establishing the commercial direction of NPD. The three-item scale of the quality of cross-functional information assesses the accuracy, promptness, and timeliness of information exchanged among the three functional areas. The four-item scale of the harmony of cross-functional relations assesses open communications, frequent interactions, collaborative attitudes, and the sense of responsibility and general satisfaction.

We assessed performance using a subjective new product success measure and three objective financial performance measures, to reduce potential common method bias. The subjective measurement items were adopted from Dyer and Song (1997). The three objective financial performance measures (ROI, ROS, and ROA) were adopted from PIMS.

Analyses

Model Specification

We tested the first 16 research hypotheses (H_{1a} – H_{8b}) using the following system of nine equations:

- (1) $AVOID^i = \alpha_1 + B'_{11}GOAL^i + B'_{12}SUPPORT^i + B'_{13}PART^i + B'_{14}EARLY^i + B'_{15}JOBROT^i + e^i_1$,
- (2) $COLL^i = \alpha_2 + B'_{21}GOAL^i + B'_{22}SUPPORT^i + B'_{23}PART^i + B'_{24}EARLY^i + B'_{25}JOBROT^i + e^i_2$,
- (3) $CROSS^i_1 = \alpha_3 + B'_{31}AVOID^i + B'_{32}COLL^i + e^i_3$,
- (4) $CROSS^i_2 = \alpha_4 + B'_{41}AVOID^i + B'_{42}COLL^i + e^i_4$,
- (5) $CROSS^i_3 = \alpha_5 + B'_{51}AVOID^i + B'_{52}COLL^i + e^i_5$,
- (6) $SUCC^i = \alpha_6 + B'_{61}CROSS^i_1 + B'_{62}CROSS^i_2 + B'_{63}CROSS^i_3 + B'_{64}SALES + B'_{65}EMPLOYEES + e^i_6$,
- (7) $ROI^i = \alpha_7 + B'_{71}CROSS^i_1 + B'_{72}CROSS^i_2 + B'_{73}CROSS^i_3 + B'_{74}SALES + B'_{75}EMPLOYEES + e^i_7$,
- (8) $ROS^i = \alpha_8 + B'_{81}CROSS^i_1 + B'_{82}CROSS^i_2 + B'_{83}CROSS^i_3 + B'_{84}SALES + B'_{85}EMPLOYEES + e^i_8$, and
- (9) $ROA^i = \alpha_9 + B'_{91}CROSS^i_1 + B'_{92}CROSS^i_2 + B'_{93}CROSS^i_3 + B'_{94}SALES + B'_{95}EMPLOYEES + e^i_9$,

where

i = country code;

$AVOID$ = avoiding behavior;

$COLL$ = collaborating behavior;

$GOAL$ = goal incongruity;

$SUPPORT$ = management support for integration;

$PART$ = participative management;

$EARLY$ = early involvement;

$JOBROT$ = job rotation;

$CROSS_1$ = level of cross-functional involvement;

CROSS₂ = quality of cross-functional information;

CROSS₃ = harmony of cross-functional relations;

SUCC = new product success;

EMPLOYEES = number of employees; and

SALES = annual sales.

Model Estimation

There were two possible chains of mediation: (1) antecedents → conflict behaviors → cross-functional integration → performance or (2) antecedents → cross-functional integration → conflict behaviors → performance. To investigate these two alternative models, we performed a series of regression models, as recommended by Judd and Kenny (1981)¹: (1) five antecedent variables on each of the two conflict behaviors, (2) two conflict behaviors on each of the three cross-functional integration components, (3) five antecedent variables and two conflict behaviors on each of the three cross-functional integration components, (4) three cross-functional integration components on four performance measures, (5) two conflict behaviors and three cross-functional integration components on four performance measures, and (6) two conflict behaviors on three cross-functional integration components. We obtained and tested separate coefficients for each equation and estimated mediating effects using criteria recommended by Baron and Kenny (1986, p. 1177).

After selecting the correct mediating model, we estimated the system of equations (Equations 1–9) using a seemingly unrelated regression analysis to maximize the efficiency of the estimation (Johnston 1984). Seemingly unrelated regression analysis technique (SURE) was developed by Zellner (1962) for estimating sets of equations that are related theoretically, as are Equations 1–9. We could argue that the disturbance terms (e_i) from the different equations (i.e., ROI, ROS, and ROA) could be correlated and that there could be some correlations between the different sets of independent variables. If these two conditions held, the ordinary least squares (OLS) estimates could be misleading. The gain in the efficiency of the coefficient estimates yielded by SURE over those yielded by OLS can be substantial (for details, see Zellner 1962).

The estimators suggested by Johnston (1984) were used to examine the six hypotheses regarding cross-national differences (H_{9a}–H_{11b}). We performed a series of Chow tests in the SURE model to compare the pairwise differences of the coefficient estimates across different countries (Johnston 1984; Kennedy 1989; Zellner 1962).

Results

Using Baron and Kenny's (1986) criteria, we found empirical support for our hypothesized mediating effects of marketing's conflict behaviors and cross-functional integration (i.e., the antecedents → conflict behaviors → cross-functional integration → performance chain). In most of the cases, the five antecedent variables affect marketing's con-

flict behaviors, and these in turn affect cross-functional integration. Although we could not establish perfect mediation, we found that (1) the effects of the antecedent variables on cross-functional integration diminished when the mediators (marketing's two conflict behaviors) were controlled and (2) the effects of the two conflict behaviors on the four performance measures diminished when the mediators (the three cross-functional integration components) were controlled.

The results of the application of SURE procedures to the system of the equations are presented in Tables 1–3. Tables 1 and 2 provide the SURE estimates for H_{1a}–H₇. Table 3 contains the SURE estimates for the relationships among cross-functional integration; ROI, ROS, and ROA; and new product performance (H₈).

Mediating effects. The results in Tables 1 and 3 show that, in at least one of the four samples, the five antecedent variables significantly affect cross-functional integration and then performance when the two conflict behaviors are taken into account. For example, goal incongruity increases the use of avoiding behavior (.19 in Japan, .15 in China [Hong Kong], .21 in the United States, and .17 in the United Kingdom; $p < .05$), and avoiding behavior decreases the three components of the cross-functional integration in all four samples. The level of cross-functional involvement and the quality of cross-functional information in turn affect firm performance. Similar results apply to the other four antecedent variables; therefore, in at least one of the four samples, marketing's conflict behaviors have the anticipated mediating effects.

The antecedents of marketing managers' conflict behaviors. Our study model first predicted relationships between five antecedent management variables and two conflict behaviors (H_{1a}–H_{5b}). Table 1 reveals a positive relationship between goal incongruity and avoiding (H_{1a}), a negative relationship between goal incongruity and collaborating (H_{1b}), a negative relationship between early involvement and avoiding (H_{4a}), and a positive relationship between early involvement and collaborating (H_{4b}). Management support for integration is related negatively to avoiding (–.16 in Japan and –.12 in China [Hong Kong]) and positively to collaborating (.21 in Japan and .18 in China [Hong Kong]) in Japan and China (Hong Kong), but not in the United States and United Kingdom. The relationships between participative management and avoiding and collaborating are significant in only four of the eight equations (H_{3a} and H_{3b}). Participative management correlates positively with avoiding in Japan (.36; $p < .01$) and China (Hong Kong) (.25; $p < .05$), whereas job rotation seems neither to prevent avoiding nor to encourage collaborating (H_{5a} and H_{5b}).

Conflict behaviors → cross-functional integration. The theoretical model next predicted that avoiding would have a mediating negative effect and collaborating a mediating positive effect on the level of cross-functional integration (H₆ and H₇). The empirical findings in Table 2 indicate that both hypotheses are supported in all four samples.

Cross-functional integration → performance. We predicted that cross-functional integration would improve performance. Results in Table 3 show a significant and positive

TABLE 1
Seemingly Unrelated Regression Estimates: The Antecedents of Cross-Functional Conflict-Handling Behaviors

Independent Variables	Dependent Variable: Avoiding Behavior				Dependent Variable: Collaborating Behavior			
	Japan	China (Hong Kong)	United States	United Kingdom	Japan	China (Hong Kong)	United States	United Kingdom
Intercept	3.08* (.43)	2.89* (.69)	3.84* (.53)	3.42* (.47)	4.00* (.39)	4.38* (.63)	4.04* (.47)	3.75* (.46)
Goal Incongruity								
H _{1a} (+)	.19* (.04)	.15** (.07)	.21* (.05)	.17* (.05)		-.31* (.06)	-.21* (.05)	-.22* (.05)
Management support for integration								
H _{2a} (-)	-.16* (.06)	-.12*** (.08)	ns	ns	.21* (.05)	.18** (.08)	ns	ns
Participative management								
H _{3a} (-)	.36* (.08)	.25** (.12)	ns	-.11*** (.07)	ns	ns	.16* (.07)	ns
Early involvement								
H _{4a} (-)	-.56* (.07)	-.39* (.10)	-.30* (.09)	-.21* (.08)	.37* (.06)	.34* (.10)	.27* (.08)	.31* (.08)
Job rotation								
H _{5a} (-)	.12* (.05)	ns	ns	ns	ns	ns	ns	ns

* $p < .01$.** $p < .05$.*** $p < .10$.

Notes: The numbers in parentheses are standard errors. ns = not significant

TABLE 2
Seemingly Unrelated Regression Estimates: Conflict Behaviors and Cross-Functional Integration

	Japan			China (Hong Kong)			United States			United Kingdom		
	Involvement	Information	Relation	Involvement	Information	Relation	Involvement	Information	Relation	Involvement	Information	Relation
Intercept	1.77* (.33)	1.62* (.40)	2.08* (.30)	1.44* (.49)	1.53* (.58)	1.98* (.44)	2.98* (.30)	1.62* (.32)	1.61* (.26)	2.27* (.28)	2.25* (.33)	2.20* (.29)
Avoiding	-.21* (.05)	-.13* (.06)	-.17* (.04)	-.17** (.08)	-.15*** (.09)	-.14** (.07)	-.16* (.04)	-.18* (.05)	-.13* (.04)	-.11** (.05)	-.19* (.06)	-.21* (.05)
Collaborating	.50* (.05)	.62* (.06)	.59* (.04)	.54* (.07)	.65* (.09)	.61* (.07)	.24* (.05)	.72* (.05)	.78* (.04)	.29* (.05)	.58* (.06)	.63* (.05)

* $p < .01$.** $p < .05$.*** $p < .10$.

Notes: The numbers in parentheses are standard errors.

TABLE 3

Seemingly Unrelated Regression Estimates: Integration and Business and New Product Performance

Independent Variables	Japan	China (Hong Kong)	United States	United Kingdom
<i>Dependent Variable: ROI</i>				
Intercept	4.22* (1.54)	10.90* (3.46)	-6.61* (1.91)	-2.67*** (1.58)
Involvement	ns	1.33** (.64)	2.06* (.35)	1.20* (.32)
Information	.88* (.31)	ns	1.99* (.40)	1.00* (.33)
Relation	ns	ns	ns	.64* (.35)
Annual sales (000)	.003* (.001)	ns	ns	ns
Number of employees (000)	-.02* (.01)	ns	ns	ns
<i>Dependent Variable: ROS</i>				
Intercept	11.11* (2.06)	12.09* (3.40)	ns	ns
Involvement	.80** (.41)	.97*** (.62)	3.04* (.42)	2.21* (.42)
Information	.88** (.42)	ns	1.40* (.48)	1.12* (.43)
Relation	ns	ns	ns	ns
Annual sales (000)	ns	ns	-.004* (.002)	ns
Number of employees (000)	ns	ns	.02*** (.01)	ns
<i>Dependent Variable: ROA</i>				
Intercept	8.95* (1.23)	17.54* (.96)	ns	3.28** (1.47)
Involvement	ns	.97*** (.56)	1.33* (.30)	.62** (.30)
Information	.62* (.25)	1.00*** (.60)	1.51* (.34)	.60** (.31)
Relation	ns	ns	ns	.51*** (.33)
Annual sales (000)	ns	ns	ns	ns
Number of employees (000)	ns	ns	ns	ns
<i>Dependent Variable: Overall New Product Performance</i>				
Intercept	2.71* (.26)	2.70* (.45)	ns	ns
Involvement	.24* (.05)	.20** (.08)	.61* (.06)	.49* (.07)
Information	.18* (.05)	.21** (.09)	.39* (.07)	.31* (.07)
Relation	ns	ns	ns	ns
Annual sales (000)	ns	ns	-.0004*** (.0002)	ns
Number of employees (000)	-.005* (.001)	ns	ns	ns

* $p < .01$.** $p < .05$.*** $p < .10$.

Notes: The numbers in parentheses are standard errors. ns = not significant.

association between each performance measure and at least one component of cross-functional integration (H_8). Thus, H_8 is supported in all four samples.

Cross-national differences. The results in Table 4 support four of our six hypotheses regarding cross-national differences (H_{9a} – H_{11b}). Counter to H_{9a} and H_{9b} , the effects of goal incongruity on marketing's two conflict behaviors do not seem significantly different for Eastern and Western groups.

As hypothesized, we find some empirical support for the other four hypotheses (H_{10a} – H_{11b}). First, the results show that there is a stronger negative management support/avoiding relation in Japan than in the United Kingdom ($p < .05$). Second, we find that there are significant differences between Japan and both Western samples for H_{10b} , H_{11a} , and H_{11b} ($p < .05$). Third, the findings reveal significant differences between China (Hong Kong) and at least one of the two Western samples for the management support for cross-functional integration and the participative management hypotheses (H_{10b} , H_{11a} , and H_{11b}).

We summarize the hypothesis testing results in Table 5. Of the 19 hypotheses, 13 are supported by the Japanese data, 12 by the Chinese (Hong Kong) data, 11 by the U.S. data, and 12 by the U.K. data.

Discussion

Managerial Implications

Our theoretical framework and empirical results have several managerial implications. We have found that, to reduce avoiding and increase collaborating behaviors in Japan, China (Hong Kong), the United States, and the United Kingdom, managers should stress reducing goal incongruity and increasing early involvement, rethink job rotation practice, and consider the uncertain influence of management support and participative management on marketing's conflict behaviors.

Our findings suggest that goal incongruity and early involvement are the two most consistent and effective factors influencing the choice of marketing's conflict behaviors in all four countries. To eliminate goal incongruities, top management should provide clear goals for marketing, R&D, and manufacturing and explicitly align the goals and objectives of different departments whenever possible. Also, early cross-functional involvement on generating new ideas, selecting NPD projects, and planning strategy significantly affects how marketing managers choose conflict behaviors and forms the heart of the knowledge-creation process.

We find that management support for cross-functional integration strongly affects marketing's conflict behaviors in

TABLE 4
Chow Tests of the SURE Coefficient Estimates:
Cross-National Differences

Hypothesis	Countries with Significant Differences*	Hypothesis Testing Results
H_{9a} : The positive effect of goal incongruity on the use of avoiding behavior is higher in U.S. and U.K. firms than in Japanese and Chinese (Hong Kong) firms.		Not supported
H_{9b} : The negative effect of goal incongruity on the use of collaborating behavior is higher in U.S. and U.K. firms than in Japanese and Chinese (Hong Kong) firms.		Not supported
H_{10a} : The negative effect of management support for cross-functional integration on the use of avoiding behavior is stronger in Japanese and Chinese (Hong Kong) firms than in U.S. and U.K. firms.	Japan versus the United Kingdom	Partially supported
H_{10b} : The positive effect of management support for cross-functional integration on the use of collaborating behavior is stronger in Japanese and Chinese (Hong Kong) firms than in U.S. and U.K. firms.	Japan versus the United States; China (Hong Kong) versus the United States; Japan versus the United Kingdom	Supported
H_{11a} : The negative effect of participative management on the use of avoiding behavior is stronger in U.S. and U.K. firms than in Japanese and Chinese (Hong Kong) firms.	Japan versus the United States; Japan versus the United Kingdom; China (Hong Kong) versus the United Kingdom	Supported
H_{11b} : The positive effect of participative management on the use of collaborating behavior is stronger in U.S. and U.K. firms than in Japanese and Chinese (Hong Kong) firms.	Japan versus the United States; China (Hong Kong) versus the United States; Japan versus the United Kingdom; [the United States versus the United Kingdom]	Supported

*Supported = the hypothesis is supported at a level of $p < .05$.

Japan and China (Hong Kong) but not in the United States or the United Kingdom. This finding may reflect Hofstede's (1980) theory of power distance, which leads us to expect that management support will have greater influence in collectivist than in individualist societies. Our overall results show how critical the decrease of avoiding and the increase of collaborating behaviors are to successful cross-functional integration and firm performance. Thus, to foster collaborating conflict behaviors among marketing, R&D, and manufacturing, our findings suggest that managers in Japan and China (Hong Kong) should capitalize on the strong influence of management support in their cultures and teach con-

flict behaviors that will lead to successful performance. Given the individualist culture of the West, the encouragement of collectivism might reap great returns in fostering collaborating conflict behavior (Lewicki, Weiss, and Lewin 1992; Rahim 1979, 1986; Tjosvold 1991).

Our findings demonstrate that managers (in both Eastern and Western countries) should decrease avoiding and increase collaborating conflict behaviors to promote successful cross-functional integration. These results not only support previous findings in the literature (e.g., Dyer and Song 1997; Lewicki, Weiss, and Lewin 1992) but also establish the mediating effect of marketing managers' conflict behav-

TABLE 5
A Summary of Hypothesis Testing Results

Hypotheses	Empirical Results
H _{1a} : Goal incongruity increases avoiding behavior.	Supported in all four samples
H _{1b} : Goal incongruity decreases collaborating behavior.	Supported in all four samples
H _{2a} : Management support for integration decreases avoiding behavior.	Supported in Japan and China (Hong Kong)
H _{2b} : Management support for integration increases collaborating behavior.	Supported in Japan and China (Hong Kong)
H _{3a} : Participative management decreases avoiding behavior.	Supported in United Kingdom, but not in United States; opposite signs in Japan and China (Hong Kong)
H _{3b} : Participative management increases collaborating behavior.	Supported in United States
H _{4a} : Early involvement decreases avoiding behavior.	Supported in all four samples
H _{4b} : Early involvement increases collaborating behavior.	Supported in all four samples
H _{5a} : Job rotation decreases avoiding behavior.	Not supported; opposite sign in Japan
H _{5b} : Job rotation increases collaborating behavior.	Not supported
H ₆ : Avoiding behavior decreases cross-functional integration.	Supported in all four samples
H ₇ : Collaborating behavior increases cross-functional integration.	Supported in all four samples
H ₈ : Cross-functional integration increases performance.	Supported in all four samples (at least one of the components)
H _{9a} : The effect of goal incongruity on avoiding behavior is more positive in the West than in the East.	Not supported
H _{9b} : The effect of goal incongruity on collaborating behavior is more negative in the East than in the West.	Not supported
H _{10a} : The effect of management support for integration on avoiding behavior is more negative in the East than in the West.	Partially supported
H _{10b} : The effect of management support for integration on collaborating behavior is more positive in the East than in the West.	Supported
H _{11a} : The effect of participative management on avoiding behavior is more negative in the West than in the East.	Supported
H _{11b} : The effect of participative management on collaborating behavior is more positive in the West than in the East.	Supported

iors on integration across cultures. We have extended previous research by incorporating three different components of cross-functional integration, which allows for exploration of the mediating effects of marketing's avoiding and collaborating conflict behaviors in more detail. The results suggest that avoiding behaviors negatively affect all three components of integration in both the West and the East and therefore must be reduced, even in countries where conflict avoidance is socially the norm. Similarly, the results also demonstrate that firms should encourage the use of collaborating conflict behavior for handling the conflicts among marketing, R&D, and manufacturing.

The results from our study suggest that, to ensure successful integration and ultimate performance, marketing managers must reduce avoiding and increase collaborating conflict behaviors. Empirical research suggests that, though managers spend as much as 25% of their time dealing with conflicts, they feel ill-prepared to do so effectively (Rahim 1986). Our theoretical framework and empirical findings provide some insights into and increase our understanding of how each of the five antecedents affects marketing's conflict behaviors. Because these five antecedents are managerially controllable, we hope that this knowledge is useful to marketing managers in managing conflict behaviors and the cross-functional interface.

Theoretical Implications

Our findings also have some theoretical implications that should lead to further theory development in both marketing and management. The relationships between participative management and marketing's two conflict behaviors challenge conventional wisdom. Results indicate that participative management actually leads to avoiding behavior in both Japan and China (Hong Kong). This may be because employees in a collectivist culture view participative management as drawing unwanted attention to themselves and so respond by avoiding conflict to preserve the hierarchical social structure (Hofstede 1980). Because, as we have shown, avoiding behaviors impair integration and ultimately performance, further research should examine the role of participative management on marketing's choice of conflict behaviors.

A surprise in the antecedent-conflict behavior relations is the role of job rotation. Despite its intuitive appeal, job rotation does not appear to influence either avoiding or collaborating conflict behavior, except in Japan. Many researchers have advocated the use of job rotation as an important method for increasing cross-functional integration (e.g., Griffin and Hauser 1996; Keys and Miller 1984; Parry and Song 1993). Our results suggest that, though it may be useful for developing broad skills, as suggested in the literature, job rotation does not affect the choice of conflict behaviors. Counter to the conventional wisdom, we find a positive effect of job rotation on avoiding in Japanese firms. This surprising result may be a result of Japan's strong emphasis on job rotation and cross-training in its companies (Keys and Miller 1984), in combination with the collectivist pressure to avoid conflict in Japanese society (Hofstede 1980; Xie, Song, and Stringfellow 1998). A longitudinal study of the effect of job rotation would provide further ex-

plication of the value of this commonly suggested mechanism for facilitating cross-functional integration.

Our study provides strong empirical evidence of the importance of cross-functional integration to firms' NPD success and financial performance, in support of the literature (e.g., Griffin and Hauser 1996; Parry and Song 1993; Ruekert and Walker 1987b). At the same time, the specific findings, derived from exploring three components of cross-functional integration variables combined with four different measures of performance, clarify and expand our theoretical understanding of the relationship between cross-functional integration and performance. Although much has been written about the importance of cross-functional integration to performance, previous research has primarily studied the cross-functional relationship aspect of integration (for a recent review, see Griffin and Hauser 1996). When we controlled for cross-functional involvement and information exchange, as described previously, we found that a harmonious cross-functional relation by itself does not make a significant contribution to firm performance. The empirical results from four countries suggest that the keys to cross-functional integration are greater emphasis on cross-functional involvement and increased information exchange rather than harmonious cross-functional relations alone. This empirical finding is somewhat surprising and is in contrast to the cross-functional integration literature. This finding opens cross-functional literature and theory up to new thoughts on the precise factors that lead to successful cross-functional integration. Future theoretical development in this area may provide some insights into the role of different aspects of cross-functional integration in the NPD process.

Finally, the cross-cultural differences found in this study also indicate that future theories of conflict behaviors should consider the influence of situational factors (e.g., differences in culture) rather than assume that an invariant process operates similarly everywhere (Lewicki, Weiss, and Lewin 1992; Tjosvold 1991). Equally important, future theories of cross-functional integration should explore the conflict process—its antecedents, behaviors, and outcomes—within its particular organizational system (e.g., NPD) and culture (Earley 1993; Gregory 1983; Hofstede 1980, 1994; Nakata and Sivakumar 1996; Triandis 1989; Tse et al. 1988).

Limitations and Future Research Directions

The first limitation of this research is in the measurements for marketing's conflict behaviors. Although we started with well-validated measurements from the management literature (Rahim 1983), many items did not pass our statistical tests for cross-national construct equivalence, as we described in the method section. Although it was not a requirement for establishing cross-national construct equivalence, we wanted to have the same measurement items for all four countries (Douglas and Craig 1983). Consequently, we were left with only two items for each of the two conflict behaviors. Although the reliability of the avoiding and collaborating behaviors in China (Hong Kong), the United States, and the United Kingdom is well above the acceptable level of .70 recommended by Peter (1979), the reliability of the collaborating behavior in the Japanese sample is .65,

short of the .70 level. However, because most of our results are significant and because we used SURE procedures for the estimation of the parameters, this deficiency might not affect our conclusions seriously. Further research efforts are needed in developing additional measurement items of conflict behaviors beyond those measures recommended by Rahim (1983).

The second limitation involves our data analyses for hypothesis testing. Although it would be better to test the model and the hypotheses simultaneously through a structural equation modeling (SEM) technique, such as LISREL four-group SEM models, the ratio of sample size to the number of free parameters for this study is not adequate to test a full four-group model (see Bollen 1989). Additional research could either reduce the complexity of the model or attempt to collect a larger data set.

A third limitation is our selection of the antecedents of the conflict-handling behaviors. We focused on five critical organizational variables as the antecedents of conflict-handling behaviors.

Although these variables are interesting and important constructs that largely have been ignored in the conflict literature and have a great potential for stimulating future theoretical development, they are not the only ones possible. Further research might incorporate other antecedent variables, such as trust, personality, environmental, or structural characteristics (Dant and Schul 1992).

We hope that further research will also provide an explanation for the surprises in our results regarding the roles of cross-functional relations, participative management styles, and job rotation. Our findings raise important questions about cultural perceptions of roles and therefore have implications for future theory development in marketing, management, and cross-cultural research, particularly regarding multiple dimensions of cross-functional integration. The surprising lack of influence of job rotation on conflict behaviors in this research suggests that further studies also are needed to examine the actual influence and value of this commonly implemented cross-functional enhancing method.

APPENDIX

Construct, Construct Reliability, and Sample Measurement Items*

Construct (Cronbach's alpha for each sample) and response formats	Sample Measurement Items
ROI: (in percentage)	The last year's return on investment.
ROS: (in percentage)	The last year's return on sales.
ROA: (in percentage)	The last year's return on assets.
New Product Success: ($\alpha_{\text{JAPAN}} = .78$, $\alpha_{\text{HK}} = .78$, $\alpha_{\text{US}} = .86$, $\alpha_{\text{UK}} = .82$) Please indicate the degree to which you agree or disagree with the following statements (1 = "strongly disagree", 7 = "strongly agree"):	The overall performance of our new product program has met our objectives. From an overall profitability standpoint, our new product development program has been successful. Compared with our major competitors, our overall new product program is far more successful.
Goal Incongruity: ($\alpha_{\text{JAPAN}} = .78$, $\alpha_{\text{HK}} = .75$, $\alpha_{\text{US}} = .74$, $\alpha_{\text{UK}} = .74$) Please indicate the degree to which you agree or disagree with the following statements (1 = "strongly disagree", 7 = "strongly agree"):	The goals and objectives are different among marketing, R&D, and manufacturing departments. Time orientations are different among marketing, R&D, and manufacturing departments. The criteria for making decisions are different among marketing, R&D, and manufacturing departments.
Management Support for Integration: ($\alpha_{\text{JAPAN}} = .87$, $\alpha_{\text{HK}} = .89$, $\alpha_{\text{US}} = .81$, $\alpha_{\text{UK}} = .81$) Please indicate the degree to which you agree or disagree with the following statements (1 = "strongly disagree", 7 = "strongly agree"):	Our organizational structure facilitates cross-functional cooperation and collaboration. Our management formally promotes and encourages cross-functional teamwork. Our management provides enough opportunities for marketing, R&D, and manufacturing departments to socialize together.
Participative Management: ($\alpha_{\text{JAPAN}} = .72$, $\alpha_{\text{HK}} = .72$, $\alpha_{\text{US}} = .74$, $\alpha_{\text{UK}} = .72$) Please indicate the degree to which you agree or disagree with the following statements (1 = "strongly disagree", 7 = "strongly agree"):	Our top management believes in the fundamental premise of participative management. Top management is interested in ideas and suggestions from people at all levels. Even the first-line employees have intimate knowledge about our company's basic policies.

APPENDIX Continued

Construct (Cronbach's alpha for each sample) and response formats	Sample Measurement Items
Early Involvement: $(\alpha_{\text{JAPAN}} = .79, \alpha_{\text{HK}} = .77, \alpha_{\text{US}} = .78, \alpha_{\text{UK}} = .76)$ (1 = "never", 7 = "always")	All three departments (i.e., marketing, R&D, and manufacturing) are involved from the very early stages of the new product development process. Manufacturing's involvement in selecting new product development projects. Marketing's involvement in planning and formulating goals and strategies. Marketing's involvement in generating new product ideas.
Job Rotation: Please indicate the degree to which you agree or disagree with the following statements (1 = "strongly disagree", 7 = "strongly agree"):	Planned job rotation of employees and managers is emphasized as a device for developing their capabilities. We rotate employees across functional areas such as marketing, R&D, and manufacturing.
Collaborating Behavior: $(\alpha_{\text{JAPAN}} = .65, \alpha_{\text{HK}} = .72, \alpha_{\text{US}} = .78, \alpha_{\text{UK}} = .79)$ Please indicate the degree to which you agree or disagree with the following statements (1 = "strongly disagree", 7 = "strongly agree"):	[We are interested in how you generally resolve conflicts with your R&D and/or manufacturing people. Please do not focus on any particular instance.] In general terms, when we have conflicts with R&D and/or manufacturing, we try to exchange complete and accurate information to resolve the conflicts. we play down the differences and emphasize the common interests.
Avoiding Behavior: $(\alpha_{\text{JAPAN}} = .86, \alpha_{\text{HK}} = .86, \alpha_{\text{US}} = .88, \alpha_{\text{UK}} = .92)$ Please indicate the degree to which you agree or disagree with the following statements (1 = "strongly disagree", 7 = "strongly agree"):	[We are interested in how you generally resolve conflicts with your R&D and/or manufacturing people. Please do not focus on any particular instance.] In general terms, when we have conflicts with R&D and/or manufacturing, we refrain from arguments and avoid the issues. we try to stay away from the disagreement.
Cross-Functional Integration 1: Level of Cross-Functional Involvement: $(\alpha_{\text{JAPAN}} = .76, \alpha_{\text{HK}} = .77, \alpha_{\text{US}} = .76, \alpha_{\text{UK}} = .72)$ (1 = "never", 7 = "always")	Marketing's involvement in determining new product features and their feasibility. R&D's involvement in analyzing market opportunities. R&D's involvement in visiting potential major customers. Manufacturing's involvement in analyzing market opportunities.
Cross-Functional Integration 2: Quality of Cross-Functional Information: $(\alpha_{\text{JAPAN}} = .79, \alpha_{\text{HK}} = .80, \alpha_{\text{US}} = .73, \alpha_{\text{UK}} = .69)$	Our cross-functional communications are often accurate, prompt, and timely. Information presented from one department to the others is accurate and timely. In general, information from the manufacturing and R&D departments lacks credibility with the marketing department.
Cross-Functional Integration 3: Harmony of Cross-Functional Relationships: $(\alpha_{\text{JAPAN}} = .79, \alpha_{\text{HK}} = .70, \alpha_{\text{US}} = .78, \alpha_{\text{UK}} = .73)$	All three departments try their best to carry out the responsibilities and commitments made to each other. There is a give-and-take relationship among the three departments (marketing, R&D, and manufacturing). All departments volunteer information and ideas that they feel affect others. There is open communication among the marketing, R&D, and manufacturing departments.

*For descriptive statistics of the constructs, see Table A1.

TABLE A1
Descriptive Statistics

Measurement	Japan (n = 295)		China (Hong Kong) (n = 126)		United States (n = 300)		United Kingdom (n = 247)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Return on investment (%)	8.84	4.49	16.69	5.80	13.20	6.68	9.55	4.80
Return on sales (%)	14.81	5.81	17.51	5.71	15.65	7.57	12.19	6.08
Return on assets (%)	10.57	3.46	19.12	5.09	12.55	5.21	9.67	4.19
New product success	4.13	.84	4.15	.82	4.09	1.31	3.64	1.16
Cross-functional integration	4.52	.86	4.56	.84	4.58	.85	4.17	.82
Avoidance	2.50	1.07	2.52	.99	3.09	1.19	2.69	1.08
Collaboration	5.43	1.00	5.45	1.00	5.09	1.10	4.69	1.10
Goal incongruity	4.12	1.33	4.07	1.29	4.72	1.38	4.13	1.36
Management support for integration	4.61	1.21	4.65	1.25	4.08	1.33	3.74	1.29
Participative management	4.20	.91	4.22	.92	4.69	1.11	4.03	1.06
Early involvement	4.71	.87	4.71	.84	4.61	.89	4.19	.87
Job rotation	3.82	1.24	3.86	1.25	2.59	1.33	2.56	1.32

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Strategic Orientation and Firm Performance in an Artistic Environment

Conventional marketing wisdom holds that a customer orientation provides a firm with a better understanding of its customers, which subsequently leads to enhanced customer satisfaction and firm performance. However, there are cautions that being too customer focused can lead to inertia, and anecdotal evidence suggests that it may be better to "ignore your customer" when developing new products. Building on the market orientation research stream, the authors examine the impact of three alternative strategic orientations—customer orientation, competitor orientation, and product orientation—on a variety of subjective and objective measures of performance in the nonprofit professional theater industry, which is marked by high rates of artistic innovation and largely unpredictable customer preferences. The results indicate that the association between strategic orientation and performance varies depending on the type of performance measure used. However, the most unambiguous result is that a customer orientation exhibits a negative association with subscriber ticket sales, total income, and net surplus/deficit.

There is no question that if a novel is amusing, it wins the approval of a public.... I believe, however, that to say, "If a novel gives the reader what he was expecting, it becomes popular," is different from saying, "If a novel is popular, this is because it gives the reader what he was expecting of it."

The second statement is not always true

—Umberto Eco 1994, p. 527

One of marketing's most revered axioms is that to be successful a product must satisfy some need or desire in the marketplace. As a corollary to this axiom, marketers generally propose that the marketing concept and customer-orientated behaviors should guide marketing mix decisions. At the same time, some researchers caution that being too customer focused can lead to inertia (see Christensen and Bower 1996; Hamel and Prahalad 1991; Leonard-Barton 1992), and anecdotal evidence suggests that it may be better to "ignore your customer" in the new product research and development process (Martin 1995; Moore 1995). This line of reasoning maintains that customers are often resistant to the idea of change, limited in their ability to provide creative input into the new product development process, and even unreliable in predicting which new product ideas ultimately will be embraced (e.g., Veryzer 1998).

Consider, for example, that in artistic endeavors a customer orientation may result in boilerplate action films, romance novels, and landscape paintings. Although demand for such derivative new products clearly exists, there also

exists a latent marketplace for completely fresh ideas. The idea that the product development and marketing process for artistic innovations may be different from that of other contexts has been recognized by a variety of researchers (see Kotler and Scheff 1997). In a thought-provoking discussion, Hirschman (1983, p. 53) maintains that "the marketing concept, as a normative framework, is not applicable to ... artists." She further notes that

[A]esthetic ... products are among the most important and useful classes of phenomena for marketers to investigate.... Their producer-centered, subjective, abstract, holistic and unique nature makes them incrementally valuable as objects for research *because* of the difficulties involved. To deal adequately with such products we must grapple with the central premise of both our theories and our measures. (Hirschman 1983, p. 53)

In this study, we use an artistic context, namely, the nonprofit professional theater industry, to explore boundary conditions for one of marketing's most fundamental premises: that a customer orientation provides a firm with a better understanding of its customers, which then leads to enhanced customer satisfaction and firm performance. We explore this relation within a multidimensional conceptualization of strategic orientation that we adapted from Gatignon and Xuereb (1997) and that includes three distinct orientations: (1) *customer orientation*, an organization's commitment to integrate customer preferences into the product development and marketing process; (2) *competitor orientation*, an organization's commitment to integrate competitor intelligence into the product development and marketing process; and (3) *product orientation*, an organization's commitment to integrate innovation into the product development and marketing process.

The multidimensional strategic orientation construct examined in this study extends market orientation research and responds to recent calls to test market orientation against other orientations (Grover 1996) and explicitly incorporate

Glenn B. Voss is an assistant professor, Department of Business Management, North Carolina State University. Zannie Giraud Voss is Assistant Professor of the Practice and Managing Director, Program in Drama, Duke University. The authors thank Theatre Communications Group for supporting this research and Ellen Garbarino, Mark Johnson, Mitzi Montoya-Weiss, Beverly Tyler, Rajan Varadarajan, and three anonymous *JM* reviewers for their helpful comments on previous drafts of this article.

product innovation into models of market orientation and performance (Hurley and Hult 1998; see also Jaworski and Kohli 1996; Narver, Slater, and Tietje 1998). Our choice of industry follows Kohli, Jaworski, and Kumar's (1993, p. 475) suggestion that "in the interest of pursuing the limits of the [market orientation] concept, the most exciting measurement extension may lie in non-profit organizations, non-traditional organizational forms, or non-standard marketing applications." It also provides an opportunity to examine empirically a position forwarded by Holbrook and Zirlin (1985), which maintains that though nonprofit arts organizations tend to adopt a product orientation that targets a high-culture audience, some customer-oriented activity may be necessary to maintain fiscal viability. This position implicitly assumes that nonprofit arts organizations can improve firm performance by being more customer oriented (see also Andreasen 1982). Our study enables us to test this assumption by examining the relative impact that customer, product, and competitor orientations have on firm performance in a nonprofit, artistic context.

The remainder of this article is organized as follows: In the next section, we present a multidimensional conceptualization of strategic orientation that builds on market orientation research; review several studies that have explored the link between firm performance and market orientation or strategic orientation; and offer hypotheses for the relationships among firm performance and strategic orientation, firm resources, product quality, and interfunctional coordination. We then describe our methodology and study sample and conclude with a discussion of the results and implications.

Reviewing Models of Performance and Market or Strategic Orientation

Extant literature contains several different definitions and operationalizations of market orientation. Narver and Slater's (1990) conceptualization of market orientation includes three components: customer orientation, competitor orientation, and interfunctional coordination. Kohli, Jaworski, and Kumar (1993) maintain that market orientation includes customer, competitor, and technology information generation; dissemination; and response implementation. On the basis of a prospectively designed meta-analysis of three market orientation scales, Deshpandé and Farley (1996) propose a reduced market orientation scale that focuses solely on customer-related activities. Deshpandé and Farley maintain that, though the reduced scale fails to capture some of the richness of detail present in the three original scales, it captures the essence of the market orientation concept and eliminates confusion about definition and measurement.

Rather than adopt the more narrow conceptualization proposed by Deshpandé and Farley (1996), Gatignon and Xuereb (1997) propose a multidimensional conceptualization that captures the richness of detail and nuance initially included in the conceptualizations of market orientation developed by Narver and Slater (1990) and Kohli, Jaworski, and Kumar (1993). Gatignon and Xuereb use the term

"strategic orientation" to refer to three distinct orientations: customer, competitor, and technology (or product).

In this study, we adapt Gatignon and Xuereb's (1997) conceptualization and define strategic orientation as a multidimensional construct that captures an organization's relative emphasis in understanding and managing the environmental forces acting on it. These forces include (1) upstream suppliers of product inputs, including intellectual capital and innovations; (2) downstream customers; and (3) current and potential competitors. This multidimensional, strategic orientation construct accommodates the firm's orientation toward the variety of external forces that likely affect its performance (e.g., Kohli and Jaworski 1990; Porter 1991; Slater and Narver 1995) and the tension between supply-side and demand-side marketing that exists in dynamic, complex, or high-tech markets (e.g., Moore 1995; Shanklin and Ryans 1984). Consistent with Day and Nedungadi (1994), we expect that managers and firms tend to place greater emphasis on certain elements of the environment to the exclusion of others. Thus, though the external orientations—product, customer, and competitor—examined in this study are components of a firm's strategic orientation, they are also distinct behavioral dimensions that likely exert independent effects on firm performance.

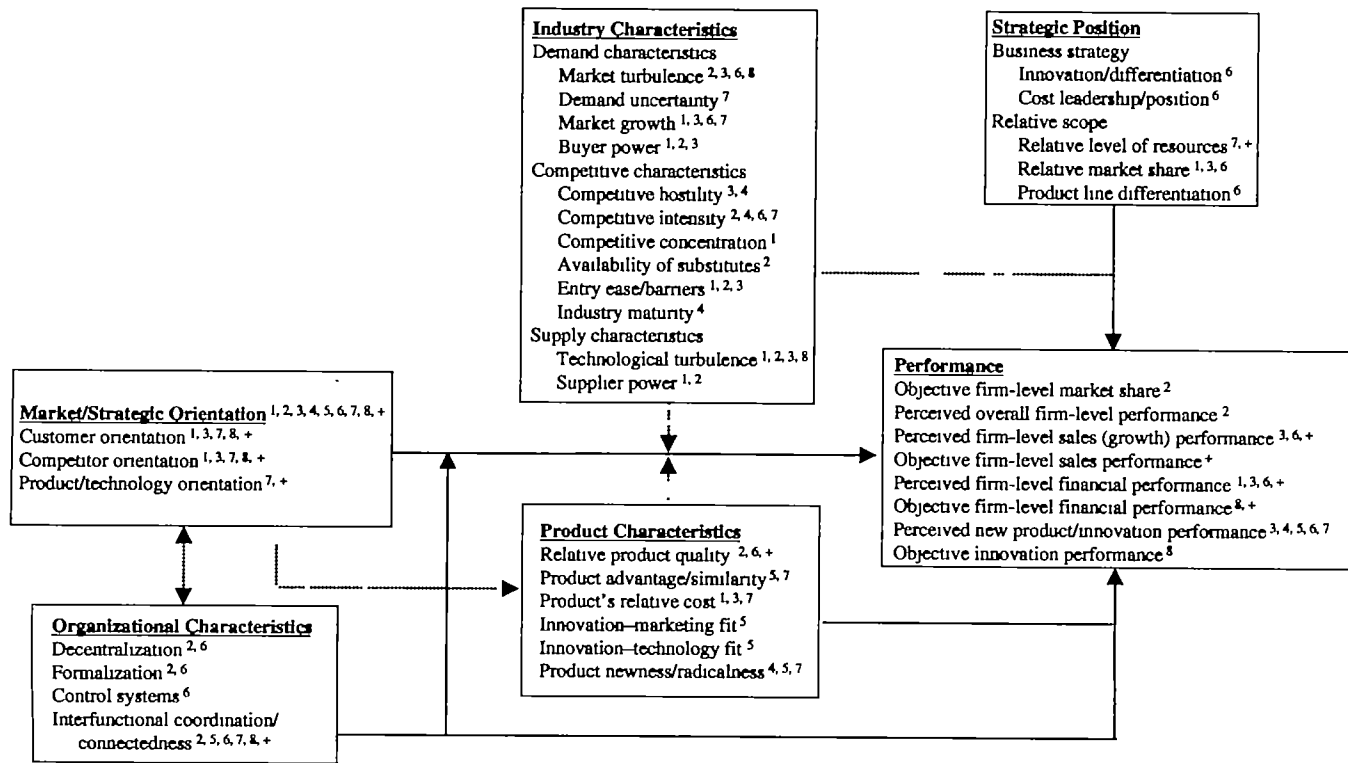
In the following sections, we develop a conceptual framework that integrates empirical research that has examined the link between firm performance and market or strategic orientation (see Figure 1). This framework identifies four categories of variables that have been proposed by various researchers to have direct or moderating effects on firm performance, in conjunction with market or strategic orientation: (1) industry characteristics, including supply, demand, and competitive characteristics; (2) the strategic position that describes a firm's relative position within its industry; (3) product characteristics that describe a product's features relative to competitor products or, in the case of a new product, relative to the firm's current products; and (4) organizational characteristics that describe how a firm manages its interfunctional activities. Following a brief review of market or strategic orientation–performance findings, we discuss each of these categories in greater detail.

The Link Between Performance and Market or Strategic Orientation

Previous research typically has predicted a positive relationship between market orientation and performance on the assumption that a market orientation provides a firm with a better understanding of its environment and customers, which ultimately leads to enhanced customer satisfaction. Empirical studies offer results that suggest a positive relation between market orientation and managers' perceptions of overall firm performance (Jaworski and Kohli 1993), managers' perceptions of financial performance (Pelham and Wilson 1996; Slater and Narver 1994), managers' perceptions of sales growth (Slater and Narver 1994), and managers' perceptions of new product performance (Atuahene-Gima 1995, 1996; Pelham and Wilson 1996; Slater and Narver 1994).

At the same time, several analyses do not support a direct, positive relationship between performance and market

FIGURE 1
Empirical Research on the Link Between Performance and Market or Strategic Orientation:
A Synthesis of Relationships Explored*



Notes:

—> Paths examined in this study.

- - -> Paths examined in previous market or strategic orientation-performance studies but not in this study.

*A "+" indicates specific variables included in the current study. Numbers denote the following studies that have explored various linkages within a market or strategic orientation-performance framework: ¹Narver and Slater (1990); ²Jaworski and Kohli (1993); ³Slater and Narver (1994); ⁴Atuahene-Gima (1995); ⁵Atuahene-Gima (1996); ⁶Pelham and Wilson (1996); ⁷Gatignon and Xuereb (1997); ⁸Han, Kim, and Srivastava (1998).

orientation, suggesting that a contingency framework may be appropriate for explicating the relation. For example, in two analyses that use objective measures of performance as the dependent variable, market orientation is not related to a firm's actual market share (Jaworski and Kohli 1993) or actual net income growth (Han, Kim, and Srivastava 1998). Using perceptual measures of performance, Atuahene-Gima (1996) reports no direct effect for market orientation on perceived new product market performance; Pelham and Wilson (1996) report no direct effect for market orientation on perceived market share or perceived growth in market share; and, using a sample of commodity businesses, Narver and Slater (1990) report a negative coefficient for market orientation and a positive coefficient for market orientation squared, which suggests a curvilinear relationship between market orientation and perceived financial performance.

Empirical results also support a contingency framework for explaining the relationship between firm performance and distinct customer, competitor, and product orientations. Using a componentwise approach to explore the relationship between performance and market orientation, Han, Kim, and Srivastava (1998) report that technical turbulence mod-

erates the relationship between objective innovation performance and customer and competitor orientation. Gatignon and Xuereb (1997) report that demand uncertainty moderates the relationship between perceived innovation success and each of three strategic orientations, customer, competitor, and product.

To summarize, though there is reason to believe that the strength of the relationship between performance and each of the strategic orientation dimensions may vary depending on industry characteristics, customer characteristics, or the type of performance measure used, the literature generally supports the proposition that market-driven and innovative firms will outperform their competitors (Day 1994; Gatignon and Xuereb 1997; Jaworski and Kohli 1993; Narver and Slater 1990; Slater and Narver 1994; Tushman and Anderson 1986). Thus, we hypothesize that firm performance will have a positive association with each of the three strategic orientations. However, as we discuss in greater detail subsequently, we intend to test this hypothesis using a variety of performance measures across different types of customers and in a context that is likely to minimize the positive impact of a customer orientation on performance.

H₁: Firm performance will have a positive association with (a) product orientation, (b) competitor orientation, and (c) customer orientation.

Industry Characteristics

Porter (1991) maintains that the basic unit of analysis in a theory of strategy is a strategically distinct industry, which is defined by its suppliers, customers, and current and potential competitors and substitutes. Most of the studies examining the link between performance and market or strategic orientation have used samples made up of firms from disparate industries. In an attempt to control for or explicitly examine industry effects, researchers have included measures of various industry characteristics in their analyses (see Figure 1). This approach is consistent with strategy research that indicates that the relationship between distinctive competencies and performance varies across industries (e.g., Hitt and Ireland 1985).

Moderating effects. Kohli and Jaworski (1990; Jaworski and Kohli 1993) hypothesize that three industry characteristics—market turbulence, technological turbulence, and competitive intensity—moderate the market orientation–performance relation, but empirical results failed to support these hypotheses, leading Jaworski and Kohli (1993) to conclude that either the market orientation–performance relation was robust across environments or the statistical tests lacked sufficient power to detect the effects. Slater and Narver (1994) also conclude that industry characteristics have little impact on the market orientation–performance link. However, in a study focusing on new product performance, Atuahene-Gima (1995) reports consistent support for a moderating effect of three industry characteristics: competitive hostility, competitive intensity, and industry maturity. Gatignon and Xuereb (1997) also report support for a moderating effect of demand uncertainty in a study that examines the effect of strategic orientation on innovation performance.

Direct effects. Several studies have explored direct effects of industry characteristics on performance, but the empirical results have been equivocal at best. Specifically, several studies report nonsignificant direct effects on performance for market turbulence, demand uncertainty, competitive concentration, and availability of substitutes (e.g., Gatignon and Xuereb 1997; Narver and Slater 1990; Pelham and Wilson 1996; Slater and Narver 1994). In addition, coefficients for buyer power and competitive intensity are positive in some analyses (Narver and Slater 1990, commodity businesses; Pelham and Wilson 1996, new product success difference variable model), negative in others (Jaworski and Kohli 1993, objective market share; Slater and Narver 1994, perceived financial performance), and nonsignificant in still others (Jaworski and Kohli 1993, subjective overall performance; Narver and Slater 1990, non-commodity businesses).

Collectively, these results suggest that (1) industry characteristics may moderate the market or strategic orientation–performance relationship in innovative environments, (2) a market orientation is less important when competitive intensity and hostility are low and the industry is

mature (Atuahene-Gima 1995), and (3) customer and technology orientations are more important and a competitor orientation is less important when demand is uncertain (Gatignon and Xuereb 1997). In this study, we do not examine the moderating influence of industry structure per se, because our analysis focuses on a single artistic industry. However, as we discuss in greater detail in a subsequent section, this is an innovative industry with relatively little direct competition and uncertain customer demand, characteristics that likely affect the links between strategic orientation and performance.

Strategic Position

According to Porter (1991), firm performance is determined by industry structure and the firm's strategic position in the industry; strategic position, in turn, is primarily a function of business strategy (i.e., product differentiation or cost leadership) and scope, which is a function of the number of product markets served and the degree of vertical integration. Several studies examining the market or strategic orientation–performance link have included measures related to (1) the firm's strategic position, including differentiation strategy (Pelham and Wilson 1996) and relative cost position (Narver and Slater 1990; Pelham and Wilson 1996; Slater and Narver 1994), and (2) the firm's relative scope, including relative market share (Narver and Slater 1990; Pelham and Wilson 1996; Slater and Narver 1994), relative level of resources (Gatignon and Xuereb 1997), and the extent of differentiation in the firm's product line (Pelham and Wilson 1996). The results with respect to business strategy have been equivocal: positive (Pelham and Wilson 1996, one analysis) and nonsignificant (Pelham and Wilson 1996, five analyses) effects have been reported for differentiation strategy and positive, negative, and nonsignificant effects have been reported for cost position (Pelham and Wilson 1996; Slater and Narver 1994). Empirical results more consistently support the proposition that scope—measured as relative market share (Narver and Slater 1990; Pelham and Wilson 1996; Slater and Narver 1994) or level of resources (Gatignon and Xuereb 1997)—has a positive impact on firm performance. In this study, we examine the association between performance and the firm's relative level of resources, and we expect the association to be positive, consistent with prior research.

H₂: Firm performance will have a positive association with the firm's relative level of resources.

Product Characteristics

Several market or strategic orientation studies also have included measures related to specific product characteristics, including relative product quality (Jaworski and Kohli 1993; Pelham and Wilson 1996), and a variety of measures of new product distinctiveness and fit (Atuahene-Gima 1995, 1996; Gatignon and Xuereb 1997). In most cases, these measures have been modeled either as independent variables that exert a direct effect on performance or as variables that mediate the positive effect of market orientation on performance. Although results are equivocal (e.g., Pelham and Wilson 1996), there is support for a positive, direct

effect on performance by product quality (Jaworski and Kohli 1993) and product advantage (Gatignon and Xuereb 1997) and a positive, mediating effect for product advantage and innovation–marketing fit (Atuahene-Gima 1996). In this study, we reexamine the expected positive association between firm performance and product quality.

H₃: Firm performance will have a positive association with the firm's relative level of product quality.

Organizational Characteristics

Several researchers have suggested that organization structure and interfunctional activities affect external information collection and use and subsequent firm performance (e.g., Jaworski and Kohli 1993; Pelham and Wilson 1996; Ruekert and Walker 1987; Slater and Narver 1995). Unfortunately, the exact nature of the relationships among market or strategic orientation, organizational characteristics, and firm performance is somewhat clouded by the variety of market orientation definitions and the resulting inconsistencies in modeling market orientation and organizational characteristics.

Antecedent effects. Jaworski and Kohli (1993) propose that (1) positive interdepartmental dynamics (i.e., more connectedness and less conflict) lead to higher market orientation and subsequent performance and (2) centralization, formalization, and departmentalization lead to lower information generation and dissemination but to more effective organizational response to information that is generated and disseminated. Their results support the expected role of interdepartmental dynamics and indicate that centralization has a negative effect on market orientation but formalization and departmentalization have no significant effect on market orientation. Pelham and Wilson (1996) also propose that organizational characteristics, including interfunctional coordination, centralization, formalization, and control systems, affect market orientation and firm performance. The equivocal results suggest that formalization and coordination may have a positive impact on market orientation; formalization may have a direct, positive effect on new product success; and centralization and control systems have no effect on either market orientation or firm performance.

Mediating effects. Other researchers have proposed interfunctional coordination (or a similar variable) as a distinct construct that mediates the effect of market orientation on performance. For example, Atuahene-Gima (1996) argues that market orientation provides a common goal orientation, which leads to enhanced interfunctional teamwork and subsequently improved performance. Path analysis results generally support the role of interfunctional teamwork as a partial mediator of the positive market orientation–performance relation.

Moderating effects. Gatignon and Xuereb (1997) maintain that interfunctional coordination facilitates communication and activities among the different functional areas that represent different strategic orientations within the organization, and the authors hypothesize that the effectiveness of coordination efforts moderates the impact of strategic orientation on performance. Their results support this moderating

role for interfunctional coordination in determining firm performance.

The results from these various studies provide modest support for the role of organizational characteristics in determining either market orientation or firm performance; however, our review suggests that the organizational variable most relevant to implementing a market or strategic orientation is interfunctional coordination. We base this conclusion on (1) the explicit inclusion of an interfunctional coordination dimension in Narver and Slater's (1990) market orientation scale; (2) the implicit inclusion of an interfunctional coordination component, including interdepartmental dissemination of and responsiveness to market information, in Kohli, Jaworski, and Kumar's (1993) scale; and (3) the significant role that interfunctional coordination plays in determining performance, as supported by Atuahene-Gima's (1996) and Gatignon and Xuereb's (1997) studies.

The conceptual and empirical evidence supports an independent, a mediating, and a moderating role for interfunctional coordination. Collectively, these results suggest that interfunctional coordination may act as a quasi moderator variable (see Sharma, Durand, and Gur-Arie 1981); that is, it both interacts with other predictor variables (e.g., strategic orientation) and is related independently to the dependent variable (performance). Consistent with results supporting a positive direct relationship between performance and interfunctional teamwork (Atuahene-Gima 1996) and between performance and a market orientation construct that explicitly includes an interfunctional coordination dimension (e.g., Narver and Slater 1990; Slater and Narver 1994), we expect a positive association between interfunctional coordination and performance. Consistent with Gatignon and Xuereb's (1997) findings, we expect that smooth interfunctional coordination among departments will reinforce or amplify the positive effect of each strategic orientation on performance, whereas poor interfunctional coordination likely will mitigate the effect of the orientation.

H₄: Interfunctional coordination acts as a quasi moderator, exerting (a) a direct, positive effect on firm performance and (b) a moderating effect on the association between each strategic orientation and firm performance.

Methodology

These hypotheses are generally consistent with the market or strategic orientation literature, but we were interested in testing them in an artistic context that, according to Hirschman (1983), might not support the expected relations, especially the expected positive association between performance and customer orientation. Thus, we used a sample of nonprofit professional theaters to explore empirically the relationship between firm performance and strategic orientation.

The Nonprofit Professional Theater Industry

Three distinctions are important to understand the nature of the nonprofit professional theater industry. First, the professional distinction indicates that these theaters participate in collective bargaining agreements with the various unions

that represent professional actors, directors, and designers. Although these theaters operate under slightly different rules that are determined by the size of the theater, they largely face the same opportunities and constraints with respect to securing creative inputs. Second, as nonprofit organizations, these theaters pursue nonpecuniary goals. As suggested by Holbrook and Zirlin (1985), this implies that these theaters have greater latitude in deciding the extent to which they want to adopt a customer versus product orientation. Third, all of the theaters we studied represent producing as opposed to presenting theaters.

To clarify this last distinction, presenting theaters typically have minimal involvement in the design and production of the plays they present. They purchase performances of shows that are produced and developed elsewhere and are "trucked in" as finished products, complete with stage managers, sets, and actors. Producing theaters, in contrast, are involved in intensive and ongoing new product development, and they are completely responsible for production inputs and processes. Each play represents a new product that can be characterized as new to the world (i.e., a world premiere of a brand new play), new to the market (i.e., a regional or local premiere of a relatively new play), an update and adaptation of a contemporary play (e.g., a new production of a Neil Simon comedy), or a revival of a theater classic (e.g., a new production of a Shakespeare play). Producing theaters organize each production as a temporary system that brings together a design and acting team responsible for product design, physical construction of the sets, and the ultimate performances. Producing new plays sometimes involves commissioning new works directly from playwrights and conducting preliminary readings and workshops of these new works—a process that might be termed "research and development." Marketing activities of producing theaters typically rely on a marketing database that contains information on all prior ticket buyers as a key component of a relationship marketing program designed to encourage repeat purchase (Voss and Voss 1997).

Producing theaters operate in an unusual combination of environmental conditions. Because literally every play can be characterized as a new product, producing theaters engage in a continuously high rate of product innovation. Also, because many nonprofit professional theaters maintain a near-monopoly presence in the markets they serve (Heilburn 1993), competitive intensity for customers is relatively low, especially in comparison with competitive intensity for donations or other resources. Finally, nonprofit professional theaters typically receive a significant portion of their ticket sales and individual donations from a stable base of lead customers who purchase season subscriptions each year. These frequent theatergoers tend to be the most knowledgeable customers, representing the innovators, early adopters, and opinion leaders who pride themselves on being aware of the newest plays. As such, they likely rely on the product expertise (and orientation) of the nonprofit professional theater to educate as well as entertain them (see Hirschman and Wallendorf 1982).

These conditions combine to create an environment in which competitive intensity for customers is relatively low, customer preferences are largely unpredictable, upstream

inputs are artistic and turbulent, and competitive intensity for these inputs (i.e., plays, actors, directors, and so forth) is high. In this dynamic, fast-cycle environment, success likely depends on product-oriented creativity to develop high-quality new products that, in turn, renew and invigorate customer markets (Williams 1992). As a complement to—or in the absence of—a strong product orientation, theaters also may achieve success by adopting a competitor orientation and emulating successful theaters in other markets, a strategy consistent with Miles and Snow's (1978) analyzer prototype.

A customer orientation, conversely, might draw resources and attention away from more critical creative activities. Moreover, several obstacles reduce the likelihood that a customer orientation would be able to elicit and implement what audience members want. First, generation of accurate information regarding what customers truly want would be limited by how informed or reliable customers are in identifying the available creative inputs (plays, directors, designers, actors). Second, given reliable, intelligent customer input, it seems unlikely that a director would be able to design an effective response because of the intangible, complex, and heterogeneous nature of the inputs to this creative process. Third, even if the customer input is intelligent and the response design is impeccable, the implementation of the artistic design does not allow for customization for the different audience segments, again compromising the effectiveness of a customer orientation.

Study Design

To examine the hypotheses, we instituted a two-stage research design in conjunction with Theatre Communications Group (TCG), a national service organization for the nonprofit professional theater field. At the end of each calendar year, TCG conducts a confidential survey of its member theaters, collecting explicit financial data that are verified with external accounting audits and operating data that include attendance levels, subscriber levels, and so forth. In 1996, theaters participating in the TCG survey produced 59,954 performances for 17.1 million ticket buyers, employed 33,563 persons, and had total revenues exceeding \$450 million (Samuels, Dineen, and Valade 1997).

In April 1996, we mailed a separate survey designed to measure strategic orientation, along with \$1 to encourage participation, to the managing directors at 128 TCG theaters. Nonrespondents were contacted with two follow-up reminders and a personal telephone call, and a total of 109 theaters ultimately returned our strategic orientation survey (85% response rate). We then combined information from our survey with information from the 1996 TCG survey described previously. Eight theaters that provided incomplete responses were eliminated from further analysis, leaving a final sample size of 101 (i.e., 79% of the original sampling frame). Tests comparing the 101 theaters in our sample with the theaters that participated in the 1996 TCG survey but did not participate in our survey indicated that nonresponse bias was not a concern. For the fiscal year 1996, the average theater in our sample had a seating capacity of 976 seats, earned \$3.5 million in total income, and had an average

ticket price of \$21.24 and total paid attendance of 87,443 at 255 performances of nine mainstage productions.

Measurement

We examined the relationship between strategic orientation and firm performance using multiple, objective, and subjective measures of performance. Firms, both for-profit and nonprofit, may pursue different objectives, and there is probably no single measure that fully captures firm performance (Venkatraman and Ramanujam 1986). But according to Ansari, Siddarth, and Weinberg (1996), nonprofit organizations in general and arts organizations in particular pursue the goal of usage maximization subject to a nondeficit constraint. Therefore, we examined marketing and financial performance measures that reflect this goal and constraint.

Objective performance measures. Our data enabled us to examine a theater's relative performance with two distinct market segments, namely, season subscribers and single-ticket buyers. More specifically, our two objective marketing performance measures were subscriber attendance, measured as total attendance attributable to subscription purchases, and single-ticket attendance, measured as total attendance attributable to single-ticket purchases. We also used two objective financial performance measures, total income and net surplus/deficit.

Subjective performance measures. Subjective measures of performance captured managers' perceptions of how well their theaters were doing compared with peer organizations in season subscription sales, single-ticket sales, and overall financial performance. These measures used a seven-point scale anchored by "well below average" and "well above average," with an "average" midpoint.

Firm resources. Firm resources were measured as the theater's total seating capacity. This measure represents the theater's single most important capital asset and a significant operational resource and constraint. Moreover, this measure acts as an effective proxy for the number of theater spaces that a theater uses ($r = .51$). Typically, the more spaces a theater employs, the more differentiated its product line is. For example, a single theater often will maintain a large-capacity space that will accommodate large casts and sets and one or two smaller spaces that are more appropriate for plays that are experimental and/or of smaller scale.

Product quality. The product quality measure captured managers' perceptions of the overall quality of productions at their theaters compared with peer organizations. This measure used a seven-point scale anchored by "well below average" and "well above average," with an "average" midpoint.

Strategic orientation and interfunctional coordination. To measure strategic orientation and interfunctional coordination, we used multiple-item scales drawn from the literature and adapted to the nonprofit theater industry. Thus, the resulting scales are industry-specific and reflect interfunctional coordination and strategic orientation in the theater industry. The Appendix presents descriptions of the items, factor analysis results, coefficient alphas for each of the scales, an assessment of the nomological validity of the

scales, summary statistics, and correlations for all the variables of interest. All scales indicated acceptable reliability and validity.

Analysis

To test our hypotheses, we conducted a series of regression analyses that substituted the various performance measures as dependent variables. For each performance measure, we conducted a hierarchical, moderated regression analysis that tests for independent and interaction effects for the hypothesized moderator, as is presented in the three subsequent equations (hereafter referred to as models):

$$(1) \quad Y = b_0 + b_1Q + b_2SC + b_3PO + b_4CO + b_5AO + e;$$

$$(2) \quad Y = b_0 + b_1Q + b_2SC + b_3PO + b_4CO + b_5AO + b_6IC + e; \text{ and}$$

$$(3) \quad Y = b_0 + b_1Q + b_2SC + b_3PO + b_4CO + b_5AO + b_6IC + b_7PO \times IC + b_8CO \times IC + b_9AO \times IC + e,$$

where

Y = performance measure,

Q = managers' perceptions of the relative quality of their theaters' productions,

SC = the theater's seating capacity,

PO = product orientation,

CO = competitor orientation,

AO = customer (or audience) orientation,

IC = interfunctional coordination, and

e = the error term.

Briefly, if the R^2 for Model 3 is significantly greater than the R^2 for Model 2, the hypothesized moderator variable (IC) is a moderator. If IC is a moderator, a significantly larger R^2 for Model 2 than for Model 1 indicates that IC is a quasi moderator. If IC is not a moderator, a significantly larger R^2 for Model 2 than for Model 1 indicates that IC is an independent predictor variable (see Arnold 1982; Sharma, Durand, and Gur-Arie 1981).

To increase scale commensurability, we used log transformations for subscriber and single-ticket attendance figures, total income, and seating capacity. To eliminate coefficient bias due to collinearity and facilitate interpretation of the coefficients, we used orthogonal factor scores for the strategic orientation and interfunctional coordination variables.

Results

The results using fiscal year 1996 objective measures of performance as the dependent variable in Models 1–3 appear in Table 1, and the results using subjective performance measures as the dependent variable appear in Table 2. There were 101 observations for each analysis presented in Tables 1 and 2, except for the analyses using subjective and objective measures of subscriber performance. Seven theaters that did not offer subscription packages were excluded from these analyses, yielding an N of 94. Because the results exhibit more dissimilarities than similarities across subjec-

TABLE 1
The Effect of Strategic Orientation on Objective Measures of Performance

Independent Variables	Subscriber Attendance			Single-Ticket Attendance			Total Income			Net Surplus/Deficit		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Seating capacity	.60 ^a (6.73)	.61 ^a (6.91)	.63 ^a (7.11)	.65 ^a (8.37)	.65 ^a (8.67)	.67 ^a (8.60)	.63 ^a (7.96)	.64 ^a (8.21)	.64 ^a (7.99)	.19 ^b (1.88)	.20 ^b (2.05)	.11 (1.15)
Quality	.02 (.22)	.01 (.08)	-.03 (-.30)	.08 (1.05)	.07 (.88)	.06 (.72)	.05 (.64)	.04 (.47)	.03 (.32)	.15 ^c (1.49)	.13 ^c (1.32)	.13 ^c (1.47)
Product orientation (PO)	.11 (1.28)	.11 ^c (1.30)	.08 (.91)	.01 (.11)	.01 (.07)	-.03 (-.39)	.05 (.65)	.05 (.62)	.01 (.19)	-.03 (-.35)	-.04 (-.41)	-.03 (-.29)
Competitor orientation (CO)	.27 ^a (3.02)	.27 ^a (3.03)	.30 ^a (3.35)	.20 ^a (2.45)	.20 ^a (2.47)	.20 ^a (2.44)	.11 ^c (1.29)	.10 (1.27)	.11 ^c (1.30)	-.22 ^b (-2.09)	-.22 ^b (-2.20)	-.20 ^b (-2.16)
Customer orientation (AO)	-.19 ^b (-2.06)	-.19 ^b (-2.17)	-.22 ^a (-2.48)	.07 (.86)	.06 (.72)	.04 (.53)	-.16 ^b (-1.95)	-.18 ^b (-2.13)	-.18 ^b (-2.15)	-.20 ^b (-1.93)	-.22 ^b (-2.17)	-.17 ^b (-1.87)
Interfunctional coordination (IC)		.14 ^b (1.78)	.12 ^c (1.50)		.18 ^b (2.39)	.17 ^b (2.26)		.17 ^b (2.22)	.17 ^b (2.20)		.26 ^a (2.65)	.28 ^a (3.30)
PO × IC			-.13 ^c (-1.57)			-.13 ^c (1.66)			-.11 ^c (-1.40)			.11 (1.28)
CO × IC			-.02 (-.21)			-.03 (-.37)			-.11 (-1.27)			-.43 ^a (-4.55)
AO × IC			-.18 ^b (-2.07)			-.04 (-.50)			-.07 (-.84)			-.20 ^b (-2.17)
R ²	.39 ^a	.41 ^a	.45 ^a	.46 ^a	.49 ^a	.50 ^a	.41 ^a	.44 ^a	.46 ^a	.13 ^b	.19 ^a	.37 ^a
F-value for change in R ²	3.16	2.02	2.02	5.73	5.73	1.02	4.91	4.91	1.38	7.00	8.70	
Degrees of freedom (numerator/denominator)	1/87	3/84	3/84	1/94	3/91	3/91	1/94	3/91	3/91	1/94	3/91	3/91
p-value for change in R ²	.08	.12	.12	.02	.02	.39	.03	.03	.26	.01	.0001	.0001

^aSignificant at $p < .01$ (one-tailed t-test).

^bSignificant at $p < .05$ (one-tailed t-test).

^cSignificant at $p < .10$ (one-tailed t-test).

TABLE 2
The Effect of Strategic Orientation on Subjective Measures of Performance

Independent Variables	Perceived Subscriber Performance			Perceived Single-Ticket Performance			Perceived Financial Performance		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Seating capacity	.11 (1.02)	.11 (1.01)	.10 (.95)	.03 (.27)	.02 (.25)	.01 (.08)	-.00 (-.02)	.00 (.02)	-.02 (-.25)
Quality	.25 ^b (2.28)	.25 ^b (2.26)	.22 ^b (2.01)	.38 ^a (3.92)	.39 ^a (3.94)	.37 ^a (3.79)	.31 ^a (3.21)	.30 ^a (3.13)	.30 ^a (3.15)
Product orientation (PO)	.14 ^c (1.36)	.14 ^c (1.35)	.14 ^c (1.30)	-.03 (-.29)	-.03 (-.27)	-.04 (-.44)	-.05 (-.54)	-.05 (-.55)	-.05 (-.52)
Competitor orientation (CO)	.01 (.11)	.01 (.11)	.05 (.50)	-.05 (-.46)	-.05 (-.45)	-.02 (-.20)	.01 (.14)	.01 (.13)	.01 (.10)
Customer orientation (AO)	-.15 ^c (-1.33)	-.15 ^c (-1.32)	-.17 ^c (-1.55)	-.01 (-.14)	-.01 (-.10)	-.04 (-.36)	-.22 ^b (-2.28)	-.23 ^b (-2.33)	-.20 ^b (-1.99)
Interfunctional coordination (IC)		-.01 (-.09)	-.03 (-.34)		-.06 (-.61)	-.08 (-.87)		.08 (.85)	.10 (1.10)
PO × IC			-.01 (-.09)			-.02 (-.24)			-.01 (-.10)
CO × IC			-.05 (-.46)			-.06 (-.56)			-.16 ^c (-1.56)
AO × IC			-.29 ^a (-2.65)			-.23 ^b (-2.29)			.02 (.19)
R ²	.11 ^c	.11 ^c	.18 ^b	.15 ^a	.15 ^b	.20 ^b	.16 ^a	.17 ^a	.20 ^b
F-value for change in R ²		.01	2.38		.37	1.81		.72	.84
Degrees of freedom (numerator/denominator)		1/87	3/84		1/94	3/91		1/94	3/91
p-value for change in R ²		.93	.08		.54	.15		.40	.48

^aSignificant at $p < .01$ (one-tailed t-test)

^bSignificant at $p < .05$ (one-tailed t-test).

^cSignificant at $p < .10$ (one-tailed t-test).

tive and objective performance measures, we describe the results separately. For consistency and parsimony, discussion of direct effects refers to results reported in Model 2, discussion of moderator results refers to Model 3, and three significance levels are recognized for all analyses: $p < .10$, $p < .05$, and $p < .01$.

Results Using Objective Performance Measures

The results using objective performance measures suggest the following (see Table 1): First, product orientation exerts a marginally significant, positive effect ($p < .10$) on subscriber attendance but no effect on any of the other objective performance measures. Competitor orientation exerts a positive effect on subscriber attendance ($p < .01$) and single-ticket attendance ($p < .01$), no significant effect on total income, and a negative effect on net surplus/deficit ($p < .05$). Customer orientation has no effect on single-ticket attendance and a negative effect ($p < .05$) on subscriber attendance, total income, and net surplus/deficit. Thus, H_{1a} receives negligible support, H_{1b} receives mixed support, and H_{1c} receives no support from the analyses using objective performance measures.

Second, seating capacity is related positively to subscriber attendance ($p < .01$), single-ticket attendance ($p < .01$), total income ($p < .01$), and net surplus/deficit ($p < .05$). Quality is related positively to net surplus/deficit ($p < .10$) but not to any of the other objective performance measures. Thus, the analyses using objective performance measures offer solid support for H_2 but negligible support for H_3 .

Third, interfunctional coordination exerts direct, positive effects on subscriber attendance ($p < .05$), single-ticket attendance ($p < .05$), total income ($p < .05$), and net surplus/deficit ($p < .01$). The results support moderator effects only with net surplus/deficit as the dependent variable ($p < .01$). Thus, H_{4a} is supported by all the analyses using objective performance measures, and H_{4b} receives support in one of the four analyses.

Results Using Subjective Performance Measures

The results using subjective performance measures suggest the following (see Table 2): First, product orientation exerts a positive effect ($p < .10$) on perceived subscriber performance but no effect on the other two subjective performance measures. Competitor orientation has no effect on any of the subjective performance measures. Customer orientation exerts a negative effect on perceived subscriber performance ($p < .10$) and perceived financial performance ($p < .05$) but no effect on perceived single-ticket performance. Thus, H_{1a} receives weak support and H_{1b} and H_{1c} receive no support from the analyses using subjective performance measures.

Second, seating capacity is not related to any of the subjective performance measures, thus providing no support for H_2 . Quality is related positively to perceived subscriber performance ($p < .05$), perceived single-ticket performance ($p < .01$), and perceived financial performance ($p < .01$), providing strong support for H_3 .

Third, interfunctional coordination exerts no direct effect on any of the subjective performance measures. There are marginally significant ($p < .10$) moderator effects for in-

terfunctional coordination with perceived subscriber performance as the dependent variable. Thus, H_{4a} is not supported by any of the analyses using subjective performance measures, and H_{4b} receives weak support in one of the three analyses.

Discussion

The use of multiple, subjective, and objective measures of firm performance in this study revealed some consistent and some inconsistent patterns of results. In the following sections, we attempt to identify these patterns and offer summary inferences.

Strategic Orientation and Performance

Overall, our results offer little support for H_{1a} , which predicted a positive association between product orientation and firm performance, but the results reported in Tables 1 and 2 suggest that a product orientation might be associated with a stronger subscriber base. Although this association is weak, it is consistent with Hirschman's (1983) position that the artistic integrity and expression that infuse the artistic mission require a self-centered product orientation, as well as with other empirical findings that indicate that subscribers embrace and share the organizational values and artistic mission embodied by an arts organization to a greater extent than single-ticket buyers do (see Bhattacharya, Rao, and Glynn 1995; Voss and Voss 1997). As opposed to single-ticket buyers who attend productions on the basis of positive reviews and word of mouth, theater subscribers share the risk that not every play will be popular with the general public.

The results offer equivocal support for H_{1b} , which predicted a positive association between competitor orientation and performance. Table 1 indicates that, after controlling for product quality and seating capacity, a competitor orientation leads to larger audiences. This result suggests that competitor-oriented theaters can successfully implement audience development tactics that proved effective at other theaters. It should be noted that the operationalization of the competitor orientation construct focused on competitors' audience development and fundraising tactics and failed to capture whether theaters monitor a wider range of competitor actions, including which new plays were produced and which playwrights, directors, and actors were used. We may have obtained stronger (or weaker) results if competitor orientation had been operationalized to include a wider range of competitor actions.

Perhaps the most unambiguous pattern of results reported in Tables 1 and 2 is the finding that customer orientation has a negative association with subjective and objective measures of subscriber performance. This finding seemingly contradicts the relationship marketing literature, which generally would recommend using a customer orientation to develop and maintain strong customer relationships. However, it is again worth noting several distinguishing features of the nonprofit theater industry and its repeat customers. First, the theater industry relies on the creation of completely new products to maintain and drive demand, especially for repeat purchases. Second, theater subscribers are the

most frequent buyers who, more than the occasional buyer, demand creative new products that are thought-provoking and provide experimentation, enrichment, and escapism (Kotler and Scheff 1997). These frequent theatergoers represent the innovators, early adopters, and opinion leaders who pride themselves on being aware of the newest plays and rely on the product expertise of their nonprofit professional theater to keep them current. The collective results suggest that these frequent theatergoers respond more favorably to a strategy that aims to lead and educate customers than to one that is customer led (Hamel and Prahalad 1991).

Single-ticket buyers, in contrast, might be characterized as what Hirschman (1983) refers to as the "public at large" or the "mass market." Our results suggest that a customer orientation has neither a positive nor an adverse effect on this broader marketplace. These single-ticket buyers, who are interested primarily in entertainment, relaxation, and laughter (Kotler and Scheff 1997), apparently respond favorably or at least adequately to less innovative and more "commercialized" creativity. It should be noted, however, that Tables 1 and 2 indicate that a customer orientation is associated negatively with a theater's financial performance in both total income and net surplus/deficit. Collectively, these results imply that efforts to produce shows in response to customers' requests are not rewarded in this industry in the form of increased attendance, increased revenues, or improved bottom lines.

We must emphasize, however, that our definition and operationalization of customer orientation focuses on the organization's commitment to integrate customer preferences into the product development and marketing process. Theaters' performance likely benefits from being responsive to customer preferences with respect to ancillary services, for example, box office service and concessions. Thus, though marketing's role in new product development in professional theaters may be limited because of the inability to predict what customers will want or like, marketing likely plays a major role in pushing the product out into the marketplace (e.g., Piper and Naghshpour 1996; Souder 1989; Workman 1993, 1998) and ensuring that customer-oriented salespeople are in the box office (cf. Siguaw, Brown, and Widing 1994).

Independent Effects of Seating Capacity and Product Quality

The level of support for H₂ and H₃ is largely dependent on whether subjective or objective measures of performance are used; seating capacity had no significant association with any of the subjective measures of performance but was related positively to all objective measures of performance, and quality was related positively to the three subjective measures of performance but to only one of the objective measures of performance. One plausible explanation for the inconsistency of results for seating capacity across subjective and objective performance measures involves the wording of the subjective measures, which asked managers to compare their theater's performance with peer organizations. If managers define peer organizations as those that have similar resources, such as seating capacity, a nonsignificant coefficient for seating capacity for the models using subjective performance measures would be expected.

The positive association between quality and the subjective measures of performance may be attributable to common method variance; perceived quality and perceived performance both were measured on the same seven-point scale. If the association is spurious, though, why is quality not related to objective performance? In responding to this question, it is worth noting that a nonsignificant association between quality and performance has been reported in prior market orientation-performance studies (e.g., Pelham and Wilson 1996), including one analysis that used an objective measure of performance (Jaworski and Kohli 1993). This observation suggests that either managers' perceptions of quality are not accurate measures of actual or consumer-perceived quality or that actual quality is not related to performance. Although the former explanation has merit (see Parasuraman, Zeithaml, and Berry 1985), we limit further discussion to reasons quality might not be related to performance in this industry.

One plausible explanation for a nonsignificant association between current quality and current subscriber attendance and revenues involves the timing of the subscription purchase, which typically occurs prior to the season. As a result, subscription sales and attendance may depend more on prior quality and reputation than they do on current quality. In a study of the customers of a nonprofit professional theater, Garbarino and Johnson (1999) report that subscribers' purchase intentions depend primarily on their trust in and commitment to the organization. In addition, many theatergoers (subscribers and single-ticket buyers) decide to attend the theater for social reasons that are completely unrelated to the quality of the performance, including a "desire to attend [the theater] with friends" and "just to have a night out" (Voss and Voss 1997, p. 285). These findings suggest that, for nonprofit professional theaters, current performance quality may have relatively little association with current marketing and financial performance.

The Role of Interfunctional Coordination

The results reported in Tables 1 and 2 indicate that interfunctional coordination (1) has a direct, positive effect on all objective performance measures and (2) moderates the relationship between strategic orientation and net surplus/deficit. It is not clear why interfunctional coordination is related to objective performance measures but not to subjective performance measures. Nor is it entirely clear why interfunctional coordination moderates only the relationship between strategic orientation and net surplus/deficit, though there are a couple of plausible explanations. First, the relatively small sample size may not have been sufficiently large to detect all significant moderator effects (see Arnold 1982). Second, net surplus/deficit represents a more complex measure of performance that incorporates both expenses and revenues. The net surplus/deficit results may reflect the impact of interfunctional coordination on the expense side of implementing a strategic orientation rather than, or in addition to, its impact on revenue generation.

For the analysis that uses net surplus/deficit as the dependent variable, the product orientation and product orientation $\times$ interfunctional coordination terms are both nonsignificant. The competitor orientation and competitor

orientation $\times$ interfunctional coordination terms and the customer orientation and customer orientation $\times$ interfunctional coordination terms are all significantly negative. These negative signs suggest that both a competitor and a customer orientation have a negative impact on a theater's bottom line and that smooth interfunctional coordination serves to amplify or exacerbate this negative effect. The customer orientation result is consistent with results that suggest a negative relationship between customer orientation and a variety of performance measures. The competitor orientation result is seemingly inconsistent with results that indicate that competitor orientation has a positive impact on attendance and, to a lesser extent, total income. One speculative interpretation of this result is that fully embracing a well-coordinated competitor orientation may lead to increased expenses associated with implementing the activities that produce improved sales and marketing results. This unexpected result is consistent with prior research that suggests that being too competitor oriented can have a deleterious effect on the bottom line (Griffith and Rust 1997).

Conclusion

Conceptual and empirical research generally supports a positive link between a customer orientation and firm performance, but a critical step in fully understanding a phenomenon is to establish its boundary conditions and recognize when alternative hypotheses become viable. Our findings contribute to the understanding of alternative strategic orientations by identifying one set of industry conditions in which a customer orientation may not be desirable, that is, nonprofit goals, high rates of intangible and artistic innovation, customers who may not be able to articulate their preferences, and lead customers who rely on the product expertise of the artist to inform and challenge them.

Although our focus on a single artistic industry limits the generalizability of the findings, it should be noted that single-industry studies are warranted—even preferred—when the internal validity of the study is more important than the generalizability of the results (McKee, Varadarajan, and Pride 1989). Because one of our primary objectives was to explore possible boundary conditions for a fundamental marketing premise, we wanted to minimize systematic and random noise attributable to industry differences. As a result, we are confident in our finding that, in this industry, a customer orientation is associated negatively with firm performance. Moreover, as Drucker (1988, p. 45) predicts, "the typical large business 20 years hence is far more likely to resemble organizations that neither the practicing manager nor the management scholar pays much attention to today: the hospital, the university, the symphony orchestra." Implicit in this prediction is the notion that mainstream managers and researchers may be informed by strategies or boundary conditions that first emerge in nontraditional sectors.

Directions for Further Research

Our findings add to the existing conceptual and empirical evidence that product or technological turbulence, unpredictable customer preferences, and competitive intensity may moderate the customer orientation–performance rela-

tion. Additional studies that examine the role of these moderators in a variety of contexts are warranted. We suspect that the customer orientation–performance relation is likely nonpositive in contexts that are marked by artistic or aesthetic innovation, largely credence or experience goods, and unpredictable customer preferences. At the minimum, creative endeavors in the performing and fine arts, design and fashion industries, and academic research seem to fit these parameters. At the maximum, these results may apply to any context that involves discontinuous innovation.

To our knowledge, this is the first study to examine the relationship between strategic orientation and performance in either an artistic or nonprofit context; therefore, additional studies that explore this relation in other artistic and/or nonprofit settings are necessary to verify the results. It would be especially interesting to determine if similar results would be found for ideological products such as religion, politics, or even academic research. Although Hirschman (1983; see also Hirschman and Wallendorf 1982) maintains that the marketing concept does not apply to these ideological endeavors, casual observation suggests that at least some ideologists (e.g., politicians) practice a customer orientation. Does this practice improve "performance"? The results from our study are consistent with criticisms sometimes leveled against customer-oriented behavior by political leaders. In pandering to the masses, a politician may be viewed as a sellout by his or her most dedicated followers and ultimately lose disaffected party loyalists. For theaters, this apparently translates into fewer subscribers.

It seems plausible that relational behavior may be a significant factor driving the negative customer orientation–performance findings in this study. It would be informative to examine whether these findings would hold in a commercial context in which relational behavior is largely absent. For example, the film industry faces many of the same product market characteristics faced by the theater industry, such as artistic innovation, largely credence or experience goods, and unpredictable customer preferences. However, unlike theaters that rely on ongoing relationships with season subscribers and repeat single-ticket buyers, the film industry releases its products through intermediaries in a distribution channel that ultimately cultivates little relational behavior by consumers. Casual observation suggests that this industry is split between major Hollywood studios that attempt to crank out large-budget, crowd-pleasing blockbusters and smaller, independent studios that produce art films. The major studios produce the biggest commercial successes and failures while the independent studios garner critical acclaim. Is customer orientation related to performance in this industry, and if so, is that relation positive or negative?

One of the more intriguing results from our study is the finding that interfunctional coordination moderates the strategic orientation–performance relation only when net surplus/deficit is the dependent variable. We speculate that these results might reflect the complexity of the net surplus/deficit measure, which incorporates both expenses and revenues. Alternatively, these results may hold only in a nonprofit context, somehow capturing the satisficing (as opposed to maximizing) nature of the bottom line in a nonprofit organization. Additional research conducted in both

for-profit and nonprofit contexts could address these alternative hypotheses.

Another subject for further research is the possibility that the choice of the key informant may bias results. Most previous research examining the market or strategic orientation–performance link has used a marketing manager as the key informant. A resource-based view of the firm would suggest that marketing managers might hold an exaggerated view of marketing's role and importance. In this study, we used managing directors, who are ultimately responsible for all of the theater's operations but not the creative decisions, as our key informants. Kohli, Jaworski and Kumar's (1993) study suggests that our results might have been different if we had used marketing or artistic directors as our key informants. Despite the difficulties involved, additional research should attempt to use multiple informants from different functional areas and examine the level of convergence in results across respondents.

Finally, the results indicating a consistently positive association between managers' assessments of product quality and their assessments of performance and a largely nonsignificant association between managers' assessments of product quality and objective performance measures are troubling to researchers and managers alike. For researchers, these results underscore the potential problems associated with collecting subjective measures from the same source for both dependent and independent variables; specifically, common method variance may inflate an expected positive association or attenuate an expected negative association between variables. For managers, these results indicate that their assessments of quality have little or no association with objective performance, which suggests that either quality is not related to performance or managers' assessments of quality are not related to performance. Additional research should examine the validity of using managers' assessments as proxies for measures of phenomena that may be more appropriately measured objectively or from the customer's perspective.

Managerial Implications

Although the current findings are subject to verification and refinement, they offer several insights for managers of arts organizations. Specifically, our results suggest that arts managers should exercise caution in applying the marketing concept in general and a customer orientation in particular. As Hirschman (1983, p. 49) observes, artists often "challenge consumers in ways they may not want to be challenged." In so doing, the artist provides a valuable, and apparently valued, social function by stimulating intellectual diversity. Thus, arts managers should be cautioned that giving customers what they ask for might not be the only, or even the best, approach to developing season programming. In artistic endeavors, what customers really want may be inscrutable from the standard customer orientation perspective. Marketing's role in this context may focus primarily on promotion, pricing, packaging, and customer service, with an emphasis placed on developing strong social relationships with loyal customers (Bhattacharya, Rao, and Glynn 1995; Voss and Voss 1997).

Instead of a customer orientation, arts leaders might do better to adopt a competitor orientation, looking to other or-

ganizations' audience development tactics rather than speculating about customer preferences. This observation is consistent with Scheff and Kotler's (1996) recommendation that arts organizations should seek strategic collaborations with other arts organizations to improve quality, build audiences, and cut costs. However, our results suggest that though a competitor orientation leads to improved attendance and revenues, it also seems to lead to higher costs and lower net surplus/deficit. These results may point to direct costs associated with implementing competitor activities or additional coordination costs associated with collaboration.

An arts organization that chooses to adopt a customer orientation may want to consider alternative programming and packaging decisions. Our results suggest that arts programming based on customer input does not satisfy the most frequent theatergoers. Therefore, in implementing a customer orientation, an arts manager may want to present a variety of programming, with different productions targeting different customer segments and relatively little overlap of customers across productions. A managing director at a theater in a major metropolitan area with a diverse population described this as the "flavor-of-the-month" strategy. To encourage some repeat purchase, two- and three-play packages should be offered instead of, or in addition to, full-season subscriptions.

Finally, the positive coefficients for interfunctional coordination in all of the analyses that use objective performance measures underscore the importance of encouraging cross-functional teamwork in a creative context. As Nonaka (1994) notes, creative activity produces chaos, and to be successful it must be balanced by a stable, hierarchical organization responsible for day-to-day implementation and orchestration. This simultaneous presence of creative chaos on the one hand and organizational stability on the other can lead to breakdowns in coordination efforts and a certain level of tension created by conflicting goals. Nevertheless, our results indicate that smooth interfunctional coordination across creative, production, and marketing activities enhances performance even in artistic environments.

Considering the uncertain climate surrounding public funding for the arts, arts managers must become increasingly savvy about the impact of their organization's strategic orientation on firm performance and the relative effectiveness of different marketing strategies. It is incumbent on marketing educators to offer current and future arts managers a balanced perspective of the role of marketing in arts organizations. Our results suggest that a blanket extension of marketing wisdom drawn from mainstream applications may not be appropriate.

Appendix

Measurement, Reliability, and Validity

To develop measures for interfunctional coordination and the three strategic orientations, we adapted items found in the relevant literature (e.g., Gatignon and Xuereb 1997; Holbrook and Zirlin 1985; Kohli, Jaworski, and Kumar 1993; Narver and Slater 1990; Slater and Narver 1994) to capture theater activities more closely. We then refined these

measures on the basis of a pretest of 51 small, nonprofit, professional theaters with annual budgets less than \$500,000. In the main study, the interfunctional coordination and strategic orientation items appeared randomly in a section titled "Some General Background Questions." Responses were captured on a seven-point scale anchored by "strongly disagree" (1) and "strongly agree" (7). To assess the reliability and validity of these scales, we first conducted exploratory factor analysis, which indicated that four factors had eigen values greater than 1; however, one of the items designed to measure competitor orientation ("We closely monitor which plays are successful at other theaters") loaded on customer orientation, which probably reflects an interest in producing plays that customers (albeit at other theaters) wanted to see. Therefore, we deleted this item and subjected the remaining items to another factor analysis, which produced four factors that had eigen values greater than 1 and collectively explained 72% of the vari-

ance in the scale items. In Table A1, we report the results of the factor analysis with orthogonal rotation, along with coefficient alphas for each scale.

We then explored the nomological validity of the strategic orientation and interfunctional coordination scales by observing correlations between these constructs and other observable and latent constructs. The pattern of results presented in Table A2 supports the nomological validity of each of the four scales. Specifically, a product orientation is associated positively with the number of plays produced at the theater in fiscal year 1996 that were obtained directly from playwrights (i.e., new-to-the-world plays that had not been picked up by publishers); a customer orientation is associated positively with the number of plays that the theater obtained from publishers (which generally purchase the rights to plays that have demonstrated audience appeal); a competitor orientation is associated positively with the number of times the theater shared mailing lists with other arts or-

TABLE A1
Four-Factor Solution with Orthogonal Rotation

	F1	F2	F3	F4
<i>Product orientation in the theater industry</i>				
We are always looking for good new plays and playwrights.	.93	-.09	.01	.12
We actively solicit and develop new plays.	.86	.05	.13	.15
A key component of our artistic mission is to develop innovative new works.	.82	-.26	-.11	.07
<i>Customer orientation in the theater industry</i>				
Our play selection is driven more by artistic considerations than by audience preferences. ^R	-.17	.86	-.12	-.04
Audience preferences are a key factor in our play selection.	.04	.85	.04	.02
We survey audiences to find out the plays they would like to see in the future.	-.14	.68	.27	.05
<i>Competitor orientation in the theater industry</i>				
We pay close attention to competitors' fundraising activities.	-.09	.07	.87	.11
We keep a close eye on our competitors' audience development tactics.	.12	.05	.87	.07
We monitor which plays are successful at other theaters.*				
<i>Interfunctional coordination in the theater industry</i>				
Most departments at this theater get along well with each other.	.16	.04	.10	.80
When members of several departments get together, tensions frequently run high. ^R	.11	.14	-.07	.79
Activities between artistic, production, and marketing departments are well coordinated.	.03	-.17	.20	.71
Coefficient alpha	.86	.73	.73	.67

^RDenotes reverse-coded item.

*This item was dropped because it loaded with the customer orientation factor. Loadings greater than .30 are in boldface and are bracketed for visual emphasis.

TABLE A2
Exploring the Nomological Validity of the Four Scales by Examining Correlations with Conceptually Related Variables

Conceptually Related Variables	Product Orientation	Customer Orientation	Competitor Orientation	Interfunctional Coordination
Number of plays obtained from playwrights.	.58 ^a	-.27 ^a	.05	.17
Number of plays obtained from publishers.	-.26	.39 ^a	.01	-.04
Number of times theater shared mailing lists with competitors.	.19	-.09	.31 ^a	.22
The theater's artistic director and I have many interpersonal struggles.	-.21	-.06	-.02	-.42 ^a

^aSignificant at $p < .01$

TABLE A3
Correlation Matrix for the Variables of Interest

	Mean	Standard Deviation	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Product orientation	5.38	1.62	1.0												
2 Competitor orientation	4.93	1.36	-.04	1.0											
3 Customer orientation	3.29	1.37	-.23 ^b	.09	1.0										
4 Interfunctional coordination	5.50	1.00	.26 ^b	.21 ^b	.05	1.0									
5 Seating capacity (log transformation)	2.86	.35	-.02	-.00	.17 ^b	-.02	1.0								
6 Perceived quality	5.88	.95	.17 ^b	-.13	-.16	.08	-.03	1.0							
7 Perceived subscriber performance	4.54	1.55	.18 ^b	-.02	-.17 ^b	.02	.09	.27 ^a	1.0						
8 Perceived single-ticket performance	4.88	1.49	.03	-.11	-.07	-.03	.02	.38 ^a	.72 ^a	1.0					
9 Perceived financial performance	4.93	1.53	.04	-.04	-.24 ^b	.09	-.05	.34 ^a	.55 ^a	.60 ^a	1.0				
10 Subscriber attendance (log transformation)	4.25	.62	.11	.25 ^b	-.12	.14	.52 ^a	.06	.39 ^a	.17	.14	1.0			
11 Single-ticket attendance (log transformation)	4.57	.40	.02	.19 ^b	.17 ^b	.18 ^b	.65 ^a	.03	.15	.10	.07	.75 ^a	1.0		
12 Total income (log transformation)	6.36	.40	.09	.12	-.06	.17 ^b	.61 ^a	.05	.18 ^b	.13	.19 ^b	.80 ^a	.78 ^a	1.0	
13 Net surplus/deficit (in thousands)	56.35	532.12	.06	-.22 ^b	-.15	.22 ^b	.15	.19 ^b	.18 ^b	.22 ^b	.28 ^a	.07	.12	.25 ^b	1.0

^aSignificant at $p < .01$ (one-tailed t-test).

^bSignificant at $p < .05$ (one-tailed t-test).

ganizations; and interfunctional coordination is associated negatively with the perceived level of interpersonal conflict between the artistic and managing directors.

We conducted a confirmatory factor analysis, which provided additional support for the unidimensionality and discriminant validity of the interfunctional coordination and strategic orientation scales. We further explored the discriminant validity of the strategic orientation scales by examining the correlations between measures formed by summing the scales. As we present in Table A3, the corre-

lations between the strategic orientation scales are generally modest. Only one correlation is significant at the .05 level, namely, a $-.23$ correlation between product orientation and customer orientation. This negative correlation supports the view that limited resources and bounded rationality would predict that a greater emphasis on one orientation should, at some point, lead to a lesser emphasis on the others. In Table A3, we also provide summary statistics and correlations for all the variables of interest in this study.

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The Influence of Anxiety: Ephebes, Épées, Posterity, and Preposterity in the World of Stephen Brown*

The author responds to a recent article in which Stephen Brown compares the work of Ted Levitt and Morris Holbrook, casts the two into a precursor–ephebe relationship, and concludes that they are “father and son, one and the same.” Although honored by this comparison, the author mentions certain ways in which Brown’s interpretations appear to distort his intentions as an author.

épée: a fencing or dueling sword having a ... rigid blade ... with no cutting edge that tapers to a ... point blunted for fencing

(Merriam-Webster 1983, p. 417).

I experienced the lead article in the January 1999 issue of the *Journal of Marketing*, by Stephen Brown (1999), with some ambivalence. In that piece, Brown draws on Harold Bloom’s (1973) thesis regarding the anxiety of influence to compare my work to that of Ted Levitt; to cast Ted and me into a precursor–ephebe relationship; and to argue that—in my ephebean role as intermediary between Levitt and posterity—I have passed through stages of assimilating, rejecting, and reconciling with my intellectual progenitor to the point at which we have become “father and son, one and the same” (pp. 1, 5). On the one hand, I feel deeply honored to see my name connected with that of such a fine writer and thinker as Professor Levitt. Who would not be proud to find him- or herself in such august company? Who would not be flattered to have such phrases as “prominent marketing thinkers” (p. 1), “leading lights of marketing letters” (p. 1), “distinguished scholars” (p. 4), “strong poets of the marketing academy” (p. 11), “influential, innovative, inspirational” (p. 11), or “academic marketing pantheon” (p. 12) attached to his or her name? On the other hand, I feel somewhat threatened to see my work interpreted along lines that seem to distort my intentions as an author.

When Brown’s piece first appeared, some of my colleagues rushed to offer me their condolences and consolations on finding myself so conspicuously trashed in public.

*This commentary was invited by the former editor, Robert Lusch, in response to an article by Stephen Brown that appeared in the January 1999 issue of *JM*. The original article and this comment offer a perspective on marketing scholarship as literature.

Morris B. Holbrook is Dillard Professor of Marketing, Graduate School of Business, Columbia University. He gratefully acknowledges the support of the Columbia Business School’s Faculty Research Fund.

Others hastened to congratulate me on achieving my allotted fifteen minutes of fame. Apparently, Brown’s critique put me in the position of a pariah for some, a celebrity for others. For me, it carried mixed signals sent by someone whom I regard as a close friend and sympathetic collaborator.

For roughly a decade, Stephen Brown and I have met regularly at conferences or other convocations and communicated steadily by e-mail or other media. I probably have exchanged more messages with Stephen in recent years than with any other individual outside my immediate family. Yet Stephen has chosen to analyze my work as if I were some sort of alien creature, held at arm’s length and examined from the vantage point of total detachment, like a chemistry experiment in a test tube or a laboratory specimen under a microscope. This hermeneutic stance has inspired some interesting insights. But, as an interpretive strategy, it has also produced some conclusions that appear rather preposterous.

Before elaborating on this preposterity, I should emphasize that I consider myself an extravagant fan and loyal supporter of Stephen Brown’s spectacular scholarly skills and admirable academic accomplishments. Stephen is simply the best writer in the field today, and—as one manifestation of the repetitiveness for which he chastises me—I have praised his work in print on several occasions. In the piece presently under discussion, as in all of Stephen’s disquisitions, there are obvious flashes of brilliance. Among these, I would count his project of “applying the techniques of literary theory to the marketing literature itself” (p. 1); his penchant for whimsy concerning “humor in Hunt, litotes in Lutz, symbolism in Sheth, versification in Varadarajan, or cacophony in Kotler” (p. 2); his perspicacious identification of “space clearing” as “the standard trope ... at the commencement of almost every published academic article” (p. 4); his penetrating Lentricchian contention that “the purpose of [literary] analyses is to strike disparate texts together to see if they spark” (p. 11); and—based on my fondness for taking stereographic three-dimensional photos of mirrors displayed behind reflective glass in the windows of retail shops—his sparkingly imaginative repositioning of me as “Morris the Catoptric” (p. 10).

But alongside these impressive epiphanies, there are also innumerable throws and thrusts, jousts and jabs, lances

and lunges—Aresian gestures that appear more épéan than ephebian but also more haphazard than hazardous. Note, for example, how Stephen blithely commits exactly the same literary atrocities of which he so boldly accuses others. For example, he deploys the unflattering but self-deflating term “sesquipedalianism” (p. 6) to describe the vocabulary of Ted and Morris (not hesitating to include the etymon “catarche,” which he happens to have taught me himself) before unleashing his own entoprotic effusion of such etymological esoterica as “tropeography” (p. 6), “hyperbole” (p. 6), “anaphoric” (p. 7), “homioteluton” (p. 7), “peccadilloes” (p. 7), “thaumaturges” (p. 8), “anadiplosis” (p. 8), “obloquy” (p. 9), “androcentrism” (p. 11), and “etioloation” (p. 12), several of which do not even appear in my much-maligned copy of Merriam-Webster (1983), now dog-eared and defoliated from excessive deployment while deciphering Brown (1999). Furthermore, Stephen charges Ted and Morris with recycling their favorite ideas (p. 7), forgetting that this is a complaint recycled from his own previous writings. Again, Stephen suggests that “Morris has published more papers on the problems of getting published than the rest of us have publications” (p. 5), neglecting that (1) there are really only four such pieces in print and (2) he has written at least that many accounts of the same issue. Stephen berates Morris for using both “bathetic” (p. 6) exaggeration and “patronizing” (p. 8) quotations to support his claims and backs this up with—you guessed it—quotations taken out of context to exaggerate their effect (pp. 6, 8). Most disarmingly—true to form if not ensiform—Stephen admits that, by the lights of his own appointed literary guru (Bloom 1975), all poems are misinterpretations of earlier poems (p. 3) and all readings are misreadings (p. 12). Of course, this includes (indeed, especially includes) his own interpretations.

First, Stephen has confined his attention to a tiny subsample of my work, namely, my more qualitative and impressionistic subjective personal introspections, as if these essays represented the only kind of writing I have ever done. He just ignores all the empirical, methodological, and conceptual pieces—in short, anything that does not lend itself to his rather strained comparison of Morris with Ted.

Second, Stephen has latched onto a few flimsy historical events—my rejection from the Harvard Business School, my three-authored critique of Levitt’s monograph on personal selling, my disagreement with Levitt’s extreme customer orientation, our joint use of the term “consummation”—to hypothesize a precursor-ephebe relationship that belies the substantial evidence to the contrary. In reality, when tracing my background, all available indicators point to an ephebean dependency on my illustrious predecessor John Howard. Throughout my career, starting when I was a fledgling MBA student at Columbia Business School in 1966, continuing through my years in the doctoral program until 1975, reaching new heights during my apprenticeship on the School’s faculty, and still flourishing to this day, I have borrowed from, affiliated with, reacted to, and built on the contributions of my teacher, mentor, colleague, and friend in the area of consumer research. I have read, revisited, studied, and absorbed virtually every word that John has written. In contrast, until a couple of years ago (when I was

invited to write a piece on the subject of global marketing and naturally turned to Levitt’s famous treatments of that topic), I had read at most two or three of Ted’s splendid *Harvard Business Review* articles (e.g., “Marketing Myopia”). Of course, Stephen would claim that I simply am unaware of Ted’s versus John’s ascendant influence over me, that the former versus the latter is buried in my unconscious psyche (along with a lot of other semi-Oedipal material that I have repressed by analogy with the Freudian model). The problem with this theory is that my five-year psychoanalysis and the accompanying process of in-depth self-discovery made it abundantly clear that if anybody has served (genially, graciously, and generously) as an intellectual father figure to Morris B. Holbrook, it is John A. Howard, *not* Theodore Levitt. To suggest otherwise would be more amphibian—I’m thinking of frogs, lizards, crocodiles, and snakes—than ephebean in spirit.

Third, Stephen has distorted my convictions to make them fit his fanciful narrative of ephebean rebellion by Morris the Matriculant against Ted the Teacher. Here, he finds it expedient to suggest that I have claimed marketing research should be “impractical” and managerially “useless” (p. 9) (what he calls “marketing research ... for its own sake” [p. 5]) and that I have pursued an “unequivocal repudiation of the managerial cause” (p. 9). The truth is that I have argued repeatedly (in accord with Stephen’s own recycling theory) for a fundamental difference between *marketing* research and *consumer* research on the grounds that the former should whereas the latter should not be guided by the criterion of practical relevance and usefulness to marketing managers.

I recognize that ... any decent piece of consumer research may eventually be relevant to some marketer somewhere or somehow. But ... the research intended to serve this marketing orientation by focusing on the firm’s profitability differs fundamentally from consumer research. In short, consumer research emerges from the perspective of the *value-seeking consumer*, whereas marketing research adopts the orientation of the *profit-seeking marketing manager* (Holbrook 1995, p. 173).

Then, in an argument more reminiscent of Rodney Dangerfield than of Harold Bloom, I borrowed from Sid Levy by expanding this point to cover the case of academic research in marketing (not to be confused with managerially relevant marketing research):

Those who teach consumer behavior or marketing must recognize and preserve the honorable difference between the academic and managerial sides of research.... [M]arketing academics pursue certain promising if circuitous paths that deserve the respect of their more managerially inclined colleagues (Holbrook 1995, p. 315).

Despite considerable obfuscation, Stephen understands this perfectly well, as when he obliquely states that “as far as [Holbrook] was concerned, the burgeoning subfield of consumer research was separate from, though related to, its parent discipline of marketing” (p. 10). Thus, contrary to the (mis)impression that Stephen gives, I have absolutely no

quarrel with the managerially useful orientation of Ted Levitt in the realm of marketing strategy and marketing research. None, nada, rien de tout. To fabricate such a "repudiation" or "daemonization" (p. 9) reflects more the influence of anxiety chez Stephen than the anxiety of influence chez Morris.

Fourth, Stephen has waywardly represented my occasional debates with other authors as signs of being "thin-skinned" (p. 7), which cleverly renders it hard for me to reply for fear of being typecast as thin-skinned about being thin-skinned. But Stephen has misconstrued my willingness to debate for a more sinister attitude that he labels "undue sensitivity, touchiness, paranoia, narcissism, self-absorption, the artistic temperament, rampant egomania" (p. 7). Just for the fun of proving Stephen wrong, I shall let these accusations go unchallenged. Readers interested in examining the case for my defense should consult (more carefully than Stephen apparently has) the relevant portions of the book to which he refers (Holbrook 1995, pp. 191, 251, 283).

Perhaps I can summarize my objections to Stephen Brown's mode of Bloomian literary analysis best by applying essentially the same method to his own oeuvre. As a Professor of Retailing (assuming I may follow his example and ignore any other work he might have done), Stephen Brown appears to show a clearly ephebean relationship to his great precursor Giovanni Boccaccio (1313–75). Sure, on the surface, the two might seem quite different. Boccaccio lived in the fourteenth century; Brown lives in the late twentieth century. Boccaccio was a Catholic in a predominantly papal culture; Brown is a Protestant in a country torn by religious conflict. Boccaccio wrote far-fetched stories about fictitious characters; Brown writes far-fetched stories about real people. Boccaccio was premodern but posterity-minded; Brown is postmodern but preposterous. According to one biographer, Boccaccio aspired reverently to creating "moral indoctrination, under a 'veil' of fiction, set forth with cunning rhetoric and saturated with classical erudition" (Bergin 1982, p. xxv); in contrast, Brown succeeds brilliantly in creating fiction, under a "veil" of moral indoctrination, set forth with cunning erudition and saturated with classical rhetoric.

But these apparent contrasts pale in comparison with the startling similarities between Boccaccio and Brown when they are viewed properly as precursor and ephebe. Consider the *amazing* fact that the last names of both authors begin with the initial "B" and contain between five and nine letters (i.e., seven, plus or minus two units). Furthermore, note the *astounding* correspondence in the first

letters of their respective national identities — "I" for Italian and "I" for (Northern) Irish. Even more *astoundingly*, Boccaccio created the first prose romance, and Brown reveres the novels of Judith Krantz. Speaking of alliteration, Boccaccio wrote the *Decameron*, whereas Brown writes about *deconstruction*. Also, in an unexampled convergence of sensibilities, both Boccaccio (c. 1350, p. 504) and Brown (1999, p. 10) use the word "scholar." Furthermore, Boccaccio makes many medieval allusions to magic and myths, even as Brown constantly refers to such mythically magical symbols of perfection as the circle, as when describing the Wheel of Retailing.

Yes, there can be little doubt that Stephen Brown has swiped virtually everything he knows from Giovanni Boccaccio (though he has failed completely to mention the Italian master as the primum mobile of his work in retailing). Although the *Decameron* consists mostly of stories on such worthy topics as jealous husbands, amorous trickery, rape, murder, incest, pedophilia, bestiality, the betrayal of friends, and sexual relations among members of the clergy, there are also many seminal influences on the work of Brown, as in Boccaccio's case study of the customer orientation demonstrated by a small retailer operating a bakery (Day VI, Story 2); his observations on the product testing of cookies and wine in the grocery business (VIII, 6); his pathbreaking treatment of services marketing in the bed-and-breakfast industry (IX, 6); his exposition of marketing ethics through the description of a dishonest merchant (VIII, 10); his critique along similar lines of medical malpractice (X, 2); his almost Lacanian fascination with the theme of mirror images (VI, 8); and his apposite account of how one man escapes punishment for his transgression by committing a sin and then righteously accusing someone else of the same offense (I, 4).

Brown might anxiously deny that Boccaccio influenced every aspect of his work on retailing or even that he means to be writing about retailing at all. Brown might protest feebly that Boccaccio receives not one single citation in any of his books or even that he has never read a word of Boccaccio. But we know better, don't we? We know that, perhaps *unconsciously*, this contemporary Northern Irish ephebe has drunk deeply from the well of inspiration provided by his illustrious fourteenth-century Italian precursor. No amount of protestation will convince us otherwise. Don't waste your breath, Stephen. If Morris Holbrook *is* Ted Levitt, then surely Stephen Brown *is* Giovanni Boccaccio. I think I would rather be Ted Levitt.

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Theodore Levitt

Anxiety Not*

If my wife ever saw Professor Brown's article, she might get funny ideas about me ... not haha funny, but who-he funny. What is funny is that anybody would care, if anybody actually does. Clearly, Professor Brown does. I am impressed with his diligence and imagination. Maybe we really do live in entirely new times, but I hope not a lot of people in the academy will be tempted to follow his example of

how to spend their time, good job though he did. I learned a lot about Professor Holbrook's work, something about Professor Bloom, and read more about myself than seems seemly. But my guess is that Morris Holbrook has stood on his own two feet all along, without me as either example or foil and certainly not as inspiration.

*This commentary was invited by the former editor, Robert Lusch, in response to an article by Stephen Brown that appeared in the January 1999 issue of *JM*. The original article and this comment offer a perspective on marketing scholarship as literature.

Theodore Levitt is Edward W. Carter Professor of Business Administration, Emeritus, Harvard University Graduate School of Business Administration.

Theodore Levitt, Morris Holbrook, and the Anxiety of Immanence*

Some years back, I wrote an article on the hoary “art or science” debate, arguing that it was time to give art a chance (Brown 1996). For some unfathomable reason, this admittedly amateurish overview antagonized an earnest marketing scientist from Australia. In keeping with the objective, rigorous, and dispassionate precepts of proper scientific method, he dashed off a furious letter to the editor, demanding my immediate defenestration, or official denunciation at least. After casting angry aspersions on my publication, professionalism, and parentage, he concluded with the show-stopping pronouncement: “The basic problem with Stephen Brown is that he is just like Shakespeare—the style is more important than the content.” That’s correct, my antagonist was comparing me to Shakespeare, *and he thought it was a criticism!*

I was reminded of this incident when I read the comments of Professors Levitt and Holbrook on my *Journal of Marketing* article, which argued for a literary approach to the marketing literature (Brown 1999). In it, I singled out their work as the very best that marketing has to offer—in a stylistic sense—and suggested that those of us who toil in thoroughly deserved obscurity have much to learn from their scintillating scholarly prose. What’s more, I offered a comparative reading of their *oeuvres* in terms of Harold Bloom’s anxiety of influence thesis, a psychoanalytically inflected model of the often uneasy relationship between ambitious poets and their illustrious predecessors. Yet, despite my attempted *homage* to their superlative academic achievements, both Levitt and Holbrook have taken exception to my contentions, albeit in very different ways. I am grateful for this opportunity to respond to their comments.

Theodore Levitt

Thanks to our late twentieth-century diet of glossy lifestyle magazines, Woody Allen movies, and, not least, the ruminations of Harold Bloom, we all have become psychobabblers, faux Freudians, or armchair therapists. It thus is tempting to interpret Levitt’s and Holbrook’s remarks from a pseudo-

psychoanalytical perspective. The former’s obvious reluctance to express his objections at length is indicative of denial, whereas the latter’s volubility suggests deep-seated, possibly congenital defensiveness. From a psychoanalytic standpoint, indeed, Levitt’s one-paragraph commentary is remarkably revealing. This revelation, it must be stressed, has nothing to do with his strange hypothesis that Holbrook, almost uniquely in academic life, has “stood on his own two feet,” since Morris freely acknowledges his conscious reliance on an illustrious precursor, John Howard. Nor, for that matter, is it Levitt’s characteristically self-effacing contention that no one cares about his work. The entire marketing community, I suspect, would disagree vehemently with this suggestion. Professor Levitt’s publications have affected each and every one of us. Modern marketing is what it is because of Theodore Levitt. *Après myopia le déluge.*

The psychoanalytically freighted revelation, rather, pertains to Levitt’s apparent belief that his spouse is best-placed to judge the merits of his work. This may well be the case, but from a psychoanalytic stance, it is very suggestive. It is strikingly reminiscent of W.B. Yeats’s reliance on the “automatic writing” of his wife, George Hyde-Lees, which stimulated some of the greatest poetic accomplishments of his career (Maddox 1999). As Ted Levitt is the W.B. Yeats of the marketing field, it is legitimate to ask if “The Marketing Imagination,” “The Globalization of Markets,” or “Marketing Myopia” were inspired by Mrs. Levitt’s “markomatic writing.” I think we should be told.

Morris Holbrook

Turning to Morris the Cat, he castigates me—low-down dirty dog that I am—for misrepresenting his work and, as if that weren’t bad enough, for betraying a mentor and admirer. Inviting though it is to respond to the latter charge by observing that we can’t all be cats, the simple fact of the matter is that Morris Holbrook *was the very first person to read the draft manuscript*. I sent it to him for comment and stressed that I’d be perfectly happy to make any changes he deemed necessary. Professor Holbrook corrected several biographical errors on my part but otherwise gave the article his unqualified approval. It is curious that he now should cast me in the role of unprincipled villain, though I recognize that his injured-innocent, reputation-sullied-but-I-will-survive, never-trust-a-wily-foreigner trope is a powerful rhetorical weapon. Almost as powerful, in fact, as the lachrymose colleagues who rushed to offer poor, maltreated Morris their undying support. Lest we conclude, however, that Columbia Business School is staffed with shrinking vi-

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Stephen Brown is Professor of Retailing, University of Ulster, Northern Ireland.

olets, it may be worth considering the outside possibility that Morris is merely stabbing me in the back for stabbing him in the back. Such, sadly, is the state of marketing scholarship....

The nub of Holbrook's commentary, nevertheless, is that I have misinterpreted his work. This is true. I can't deny it. And I make no apology for doing so. As I made perfectly clear in my article, every interpretation is a misinterpretation, and every reading a misreading. Misinterpretation can't be avoided, according to Bloom's anxiety thesis, nor should it be. The issue is not whether misinterpretation occurs (because it always does, all the time) but whether it is a useful misinterpretation, a meaningful misinterpretation, an imaginative misinterpretation, an improbable misinterpretation, a preposterous misinterpretation (in my opinion, we need more preposterousness in marketing, not less). A misinterpretation, in short, that raises interesting questions requiring further reflection, consideration, or investigation. Just as I misinterpreted Holbrook's corpus, so too his commentary misinterprets my misinterpretations, and I'm presently engaged in misinterpreting his misinterpretation of my misinterpretation of his original misinterpreted sources. Or something like that.

It would be nice, of course, to respond to Holbrook's catalog of criticisms in detail. Such a strategy, however, would be a fatal mistake—a fatal mistake Morris is hoping I will make. Before revealing the thinking behind Holbrook's rhetorical honey-trap—in truth, it is so ingenious that I hesitate to show how the mechanism works—I too will simply recommend that readers make up their own minds regarding Morris's artistic temperament (creatively speaking, a virtue not a vice, as I pointed out). They can come to their own conclusions regarding his earlier aversion, now conveniently airbrushed, to managerially oriented scholarship (conspiracy theorists should check out "What is Consumer Research?"). My failure to mention the complete works of MBH just might have something to do with his recommendations concerning *ansatzpunkt* (an interpretative technique that focuses on tiny parts, not the whole, of works of literature). And, as for my mendacious misuse of the very stylistic tricks that I treacherously trash in old friends of a feline persuasion, I can only say in my defense that I was following Morris's clearly stated instructions. In his co-gently argued anthology, *Consumer Research*, Holbrook (1995, pp. 263–69) repeatedly asserts that the manner should reflect the matter, that form and content must coincide, that literary language ought to exemplify what it describes. As nothing if not an enthusiastic canine, keen to attend to his master's voice, I tried to write—albeit inadequately—in a way that imitated the thing I was writing about, namely, the literary styles of Ted Levitt and Morris Holbrook. Evidently, Morris the Catoptric failed to recognize himself in the mirror of academic approbation.

The Anxiety of Immanence

Be that as it may, if I *were* to respond to Holbrook's red flag of rhetoric, citing chapter and verse of what he said when, I would be absolutely certain to "lose" this exchange. And why? Because readers of *JM*, even neutral subscribers to

this august organ, automatically will assume that Holbrook knows best. He wrote the publications at issue, after all, and his intentions are the ones that matter, irrespective of his Irish interlocutor's assertions. This reaction is perfectly reasonable and very much in keeping with the principles of literary criticism—one hundred years ago. In this regard, it is necessary for readers of *JM* to appreciate that most schools of twentieth-century literary theory do not bend the knee to authorial authority. The intentions of the author are interesting but ultimately irrelevant. Once written, works of literature take on lives of their own and are analyzed from all sorts of standpoints. Reception theorists interpret works from the reader's perspective; psychoanalytical critics, such as Bloom, read them in terms of the manifold models of the unconscious (Freudian, Jungian, Lacanian, and so forth); and the so-called New Criticism is predicated on immanence, the work of literature in itself, completely separate from its context, its readership, the author's mental stability, or whatever.

Holbrook, to be sure, is aware of all this. He is a literature major and was trained in the New Criticism. The all-important question, then, is why Morris is getting into a (cat)flap about authorial intention when he is fully *au fait* with its irrelevance? Some unsophisticated readers might surmise that good old-fashioned hypocrisy is at work (authorial intentions don't matter, except when they're mine!). Others, of a more magnanimous mind-set, might intuit that Holbrook is suffering from the "anxiety of immanence," a deep-seated reluctance to let his publications be read in and of themselves, as works of literature, even though he has spent most of his career arguing for literary approaches to marketing and consumer research. (The same anxiety, incidentally, is also evident in Levitt's commentary when he suggests that academics shouldn't waste their time reading marketing literature *qua* literature, which is somewhat perverse coming from one of the greatest stylists in the discipline.)

No, the real reason that Morris is claiming authorial immunity is that it is an unassailable debating position, one that only a rapier-witted rhetorical swordsman of Holbrook's *épée*-wielding caliber could unsheathe and wiggle with impunity. Morris is aware that authorial intention doesn't matter. He is also aware that *JM* readers are unaware that authorial intention doesn't matter. Therefore, he is using his awareness of their unawareness to ensnare the unwary, those who are unaware of *JM* readers' unawareness (still with me?). Things can only go wrong if one of the unwary makes *JM* readers aware of their unawareness of Holbrook's awareness of their unawareness. That would really put the cat among the ... gee, there were pigeons here a couple of minutes ago.

Just in case any readers mistakenly conclude that Holbrook is hoist by his own petard, let me make it clear that I have an unfair advantage over Morris. Six hundred years of literary endeavour, to be precise. As Holbrook so perspicaciously observes, I am indeed Giovanni Boccaccio reborn. Five years of expensive hypnotherapy have revealed that my past lives include Napoleon, Nefertiti, and, naturally enough, Shirley MacLaine (though she doesn't like to talk about it). Boccaccio was yet another reincarnation and,

much as I would love to deconstruct *The Decameron* after I've finished invading the Russian formalists (Brown, Stevens, and Maclaran 1999), I worry that people might consider me unduly self-obsessed. As everyone knows, too much self-absorption makes you go blind. Or myopic, at least.

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Marketing Literature Review

MYRON LEONARD, Editor
Western Carolina University

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Growing Older, But Not Up. Dan Fost, *American Demographics*, 20 (September 1998), pp. 58–60, 62–65. [Trends, Baby boomers, Discretionary income, Consumer expenditures, Market strategy, Motorcycles, Snowmobiles, Personal watercraft, Examples.] 1

The Weather as a Business Tool. Marco Pasqualina, *American Demographics*, 20 (September 1998), pp. 12, 14–17. [Sales promotions, Consumer buying patterns, Degree-dependent impacts, Mass-market manufacturers, Retailers, Market strategy, Product categories, Examples.] 2

So Stuff It, Already! Lisa E. Phillips, *American Demographics*, 20 (November 1998), pp. 67–69. [Trends, Grocery shopping, Convenience, Brand names, Assortments, Coupons, Examples.] 3

Let's Talk Dirty. Helene Stapinski, *American Demographics*, 20 (November 1998), pp. 50–54, 56. [Discussion, Priorities, Housework, Time spent, Demographic characteristics, Smell-good trend, Cleaning companies, Prepackaged meals, Household cleaners, Examples.] 4

Marketing Mix Customization and Customizability. Marc Logman, *Business Horizons*, 40 (November/December 1997), pp. 39–44. [Market strategy, Options, By the marketing firm or by consumers themselves, Product, Price, Communication, Distribution and logistics, After-sales support and costs, Examples.] 5

The Influence of Brand and Corporate-Identity Programmes on Consumer Behaviour: A Conceptual Framework. James G. Hutton, *Journal of Brand Management (UK)*, 5 (November 1997), pp. 120–35. [Discussion, Brands, Trademarks, Model presentation, Buyer preferences (conscious and unconscious associations, familiarity, aesthetics, exposure effects), Comparison with models of persuasion, Examples.] 6

The Nature of Satisfaction: An Updated Examination and Analysis. Barry J. Babin and Mitch Griffin, *Journal of Business Research*, 41 (February 1998), pp. 127–36. [Literature review, The conceptualization offered maximizes face validity and is more true to the nature of reflective indicators of latent constructs, The possibility of distinct satisfaction and dissatisfaction constructs is investigated.] 7

Does Involvement Moderate Time-Dependent Biases in Consumer Multiattribute Judgment? David Mazursky and Yoav Ganzach, *Journal of Business Research*, 41 (February 1998), pp. 95–103. [Literature review; Two experiments; The positivity bias,

which characterized delayed judgments in low-involvement situations, is eliminated when involvement is high; The higher accessibility by highly involved participants gave rise to judgments that were less positively biased in delay.] 8

The Mountain Man Myth: A Contemporary Consuming Fantasy. Russell W. Belk and Janeen Arnold Costa, *Journal of Business Research*, 25 (December 1998), pp. 218–40. [Literature review, Participant observation at rendezvous, Enactments, Fantasy and myth, Activities and ambience, Interpretation, Assessment.] 9

Constructive Consumer Choice Processes. James R. Bettman, Mary Frances Luce, and John W. Payne, *Journal of Business Research*, 25 (December 1998), pp. 187–217. [Literature review, Propositions, Integrated framework, Choice tasks in which accuracy and effort goals predominate, Minimizing negative emotion, Maximizing ease of justification, Assessment.] 10

The Effects of Recognition and Group Need on Volunteerism: A Social Norm Perspective. Robert J. Fisher and David Ackerman, *Journal of Consumer Research*, 25 (December 1998), pp. 262–75. [Literature review, Laboratory and field experiments, Promotional appeals based on group need and promised recognition are effective only when used in combination, Implications.] 11

The Influence of Display Characteristics on Visual Exploratory Search Behavior. Chris Janiszewski, *Journal of Consumer Research*, 25 (December 1998), pp. 290–301. [Literature review, Hypotheses, Four experiments, Comparisons, Goal-directed research, Connection between layout of objects in a display and the amount of attention given to each object, Implications for catalog page layout and visual merchandising.] 12

The Effect of Ownership History on the Valuation of Objects Michal A. Strahilevitz and George Loewenstein, *Journal of Consumer Research*, 25 (December 1998), pp. 276–89. [Literature review, Hypotheses, Four experiments, Impacts, Duration of ownership, Current versus previous ownership, Time elapsed since loss, Statistical analysis, Implications, United States, Israel.] 13

How Tolerable is Delay? Consumers' Evaluations of Internet Web Sites After Waiting. Benedict G.C. Dellaert and Barbara E. Kahn, *Journal of Interactive Marketing*, 13 (Winter 1999), pp. 41–54. [Conceptual framework and formal random utility model, Four computer-based experiments, Waiting need not have a negative effect if waiting time is well managed, Statistical analysis.] 14

Trust and Concern in Consumers' Perceptions of Marketing Information Management Practices. George R. Milne and Maria-Eugenia Boza, *Journal of Interactive Marketing*, 13 (Winter 1999), pp. 5–24. [Literature review, Models, Three studies, Factors, Experience, Reputation, Contractual, Regulation, No trust, Comparisons, Direct marketing and all industries, Statistical analysis.] 15

Predecisional Distortion of Product Information. J. Edward Russo, Margaret G. Meloy, and Victoria Husted Medvec, *Journal of Marketing Research*, 35 (November 1998), pp. 438–52. [Literature review; Hypotheses; Two consumer choice experiments; When relatively equivocal information about two hypothetical brands is acquired one attribute at a time, the evaluation of a subsequent attribute is distorted to support the brand that emerges as the leader; Implications.] 16

A Probabilistic Model of Brand Choice Incorporating Purchase Reinforcement and Variety Seeking Behavior. Arindam Banerjee, Suresh Divakar, and Devi Prasad Karuppur, *Journal of Segmentation in Marketing*, 2 (No. 2, 1998), pp. 83–97. [Literature review, Survey of households, Buying state and marketing mix variables, Fluctuations in the attraction of consumers toward particular brands from long-term loyalty toward them, Managerial implications] 17

Predicting Segment Membership of Financial Services Consumers. Tina Harrison, *Journal of Segmentation in Marketing*, 2 (No. 2, 1998), pp.45–59. [Discussion, Consumer survey, Categories, Financially confused, Apathetic minimalists, Capital accumulators, Cautious investors, Variables (involvement, capital accumulation, financial cognition, future planning), Statistical analysis, United Kingdom.] 18

Targeting Financial Influentials by Means of the Decision-Making Process. Mary C. LaForge, Richard M. Reese, and Roger Gomes, *Journal of Segmentation in Marketing*, 2 (No. 2, 1998), pp. 61–81. [Literature review, Decision process model, Survey of households, Opinion leadership and information seeking, Interpersonal communication, Self-confidence, Purchase process patterns, Statistical analysis.] 19

A Preliminary Investigation of Ego Dimensions: In Search of the "Why" in Consumer Segmentation. Jack A. Lesser, *Journal of Segmentation in Marketing*, 2 (No. 2, 1998), pp. 27–43. [Literature review, Consumer survey, Profiles, Uncomfortable compliants, Disengaged, Disinterested, Internalized, Informational, Impacts, Shopping behavior, Statistical analysis.] 20

Spiritual Solace on Two Wheels: The Motorcycle Mystique and Rider Segments. William R. Swinyard, *Journal of Segmentation in Marketing*, 2 (No. 2, 1998), pp. 7–25. [Literature review, Survey, Lifestyles, Social bikers, Loners, Part-timers, Hard core, Uncommitted, Statistical analysis.] 21

A Cross-Sectional Test of the Effect and Conceptualization of Service Value. J. Joseph Cronin Jr., Michael K. Brady, Richard R. Brand, Roscoe Hightower Jr., and Donald J. Shemwell, *Journal of Services Marketing*, 11 (No. 6, 1997), pp. 375–91. [Literature review, Hypotheses, Two empirical studies, Comparisons, Basic and value-added models, Cognitive addition process, Statistical analysis, Managerial implications.] 22

1.2 Legal, Political, and Economic Issues

See also 50, 56, 163, 166, 186

Confronting Corporate Welfare. Thomas A. Hemphill, *Business Horizons*, 40 (November/December 1997), pp. 2–8. [Discussion, Advantages, Disadvantages, Public policy reform, Disclosure, Evaluation, Time limits and penalties, Examples] 23

Trademark Protection. Erica B. Garay, *Marketing Management*, 7 (Fall/Winter 1998), pp. 54–56. [Discussion, Court decisions, Third-party misuse, Internet issues, Assessment.] 24

1.3 Ethics and Social Responsibility

See also 15, 50

Marketing Ethics: A Comparison Between Services and Other Marketing Professionals. C.P. Rao and Anusorn Singhapakdi, *Journal of Services Marketing*, 11 (No. 6, 1997), pp. 409–26 [Literature review, Corporate culture, Codes of practice, Survey of marketing practitioners, Members of the services profession do not differ from members of other marketing professions with respect to the components of ethics investigated.] 25

Whatever It Takes. Michele Marchetti, *Sales and Marketing Management*, 149 (December 1997), pp. 28–32, 34–36, 38. [Ethical behavior of salespeople, Deception, Aggressive compensation plans, Customer expectations, Kickbacks, Impacts, Codes of conduct, Examples.] 26

What Price Knowledge? Erika Rasmusson, *Sales and Marketing Management*, 150 (December 1998), pp. 56–58, 60–66. [Consumers' privacy concerns, Telling customers why information is being collected, Internet users, Self-regulation, Examples.] 27

2. MARKETING FUNCTIONS

2.1 Management, Planning, and Strategy

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Marketers: Web Gains Budget Attention. Christine Bunish, *Business Marketing*, 82 (October 1997), pp. 1, 42. [Business-to-business, Roundtable discussion, Impacts, Information technology, Internet, Trade/press advertising, Meeting customer needs.] 28

Making Strategy: Learning by Doing Clayton M. Christensen, *Harvard Business Review*, 75 (November/December 1997), pp. 141–56. [Discussion, Stages, Identify driving forces in competitive environment, Formulate strategy to address driving forces, Create a plan to implement strategy, Case study.] 29

Strategy Under Uncertainty. Hugh Courtney, Jane Kirkland, and Patrick Viguerie, *Harvard Business Review*, 75 (November/December 1997), pp. 66–79. [Discussion, Levels of uncertainty (clear enough future, alternate futures, range of futures, true ambiguity), Portfolio of actions (no-regrets moves, options, big bets), Examples.] 30

Changing the Way We Change. Richard Pascale, Mark Mittlemann, and Linda Giols, *Harvard Business Review*, 75 (November/December 1997), pp. 126–39. [Discussion, Organizational drift, Incorporating employees, Leading from a different place (solutions must come from the ranks), Instilling mental disciplines, After-action review, Guidelines.] 31

Information Sources Used by an Organization During a Complex Decision Process: An Exploratory Study. H.L. Brossard, *Industrial Marketing Management*, 27 (January 1998), pp. 41–50. [Literature review, Survey of firms, Factors, Commercial, Non-commercial impersonal, Noncommercial personal, Internal, External consultant, Statistical analysis, Managerial implications.] 32

Maintaining Client Commitment in Advertising Agency–Client Relationships. Douglas W. LaBahn and Chiranjeev Kohli, *Industrial Marketing Management*, 26 (November 1997), pp. 497–508. [Literature review, Model presentation, Hypotheses, Survey of advertisers, Effects, Productive interaction, Conflict, Creative quality implementation, Statistical analysis, Managerial implications] 33

Relationships Between Businesses and Marketing Research Firms: Impact of Partnering on Performance. Linda I. Nowak, Paul D. Boughton, and Arun J.A. Pereira, *Industrial Marketing Management*, 26 (November 1997), pp. 487–95. [Literature review, Hypotheses, Survey of marketing vice presidents, Effects, Product and service quality, Cost efficiency, Timeliness, Overall customer satisfaction, Statistical analysis, Managerial implications.] 34

The Self-Managed Team and TORI Theory. Ali Al-Kazemi and Gary Zajac, *International Journal of Commerce and Management*, 8 (No. 1, 1998), pp. 70–87. [Literature review; Leadership; Trust; Hypotheses; If organizations wish to avoid undermining the financial productivity and morale gains of teamwork, they should reconsider their reliance on downsizing and contingent work forces as means of achieving cost savings.] 35

Market Orientation and Performance of Large Property Companies in Hong Kong. Alan C.B. Tse, *International Journal of Commerce and Management*, 8 (No. 1, 1998), pp. 57–69. [Literature review, Hypotheses, Personal interviews, Financial performance, Impacts, Consumer philosophy, Integrated marketing organization, Adequate marketing information, Strategic orientation, Operational efficiency, Statistical analysis.] 36

Evolving Roles and Responsibilities of Purchasing Organizations. P. Fraser Johnson, Michiel Leenders, and Harold E. Fearon, *International Journal of Purchasing and Materials Management*, 34 (Winter 1998), pp. 2–11. [Longitudinal analysis, Changes, Organization structure, Chief purchasing officer (CPO) reporting relationship, CPO title, CPO turnover, Prior purchasing experience, Involvement in major corporate activities, Assessment.] 37

Proactive Supply Management: The Management of Risk. Larry R. Smeltzer and Sue P. Siferd, *International Journal of Purchasing and Materials Management*, 34 (Winter 1998), pp. 38–45. [Literature review, Case study research, Cycle of administrative support activities, Transaction cost theory, Resource dependency theory, Conditions necessary for purchasing to manage risk, Assessment, Managerial implications.] 38

Shadow and Light: Type A Behavior and Conflict Handling Styles in Entrepreneurs. Janice Barker Corzine and Jacqueline N. Hood, *Journal of Business and Entrepreneurship*, 10 (October 1998), pp. 115–28. [Survey of civic and professional organizations, Achievement striving and impatience–irritability dimensions, Effects, Integrating, Dominating, Compromising, Avoiding, Obliging, Statistical analysis, Implications.] 39

Assessing Founder Status in Entrepreneurship: A Definitional Perspective. Michael D. Ensley, JoAnn C. Carland, and James W. Carland, *Journal of Business and Entrepreneurship*, 10 (October 1998), pp. 37–50. [Literature review, Hypotheses, Survey of CEOs, Comparisons, Founders, Nonfounders, Both groups exhibited high levels of recognition and appreciation for strategic management practices, Statistical analysis.] 40

A Role for the Forecasting Function. Rich Gordon, *Journal of Business Forecasting*, 16 (Winter 1997–98), pp. 3–7. [Mass customization, Forecasting philosophy, Consumption drives shipments, Dynamic marketplace, Forecast assumptions are important, One forecast links all planning activities, Forecasting cycles, Data sets, Management information systems, Models, Case study, Consumer packaged goods.] 41

Journal of Business Research, 41 (January 1998), pp. 3–93. [Eight articles on dynamics of strategy, Competitive behavior, Harmony, Belligerence, Reengineering, Technologies, Competencies, Reconfigurable and flexible strategies, Environments (hypercompetitive, unstable, global), Creative action, Strategic change during recession, Relationship management, Decision making, Heuristics and rationality, Case studies.] 42

What Every Business Should Learn from Microsoft. Sunny Baker, *Journal of Business Strategy*, 19 (September/October 1998), pp. 36–41. [Discussion, Market strategy, Software packages, Management styles, Competitive intelligence, Acquisitions, Case study.] 43

A War Room Can Be Heaven. William A. Brindley and Peter K. Laomea, *Journal of Business Strategy*, 19 (September/October 1998), pp. 47–50. [Coordinating global activities, Quality improvement, Problem recognition and solution, Virtual system, Case study, Banking industry.] 44

Everything Wired Must Converge. Christopher Elliott, *Journal of Business Strategy*, 18 (November/December 1997), pp. 30–34. [Trends, Combining disparate corporate networks, Intranets, Effectiveness, Costs, Software packages, Security, Extranets (connect two intranets), Employee training, Examples] 45

Competitive Intelligence Can Be a Bad Investment Dan Simpson, *Journal of Business Strategy*, 18 (November/December 1997), pp. 8–9. [Discussion, Problems, Being a follower and not a leader, Assumes knowing who competitors are, Confusing data with intelligence, Success, Guidelines.] 46

Organizing for Interactivity. George S. Day, *Journal of Interactive Marketing*, 12 (Winter 1998), pp. 47–53. [Commentary on arti-

cle by Parsons, Zeisser, and Waitman (1998); Aligning organizational structure with interactive strategy; Impediments (deferring participation, picking the wrong technology, lack of commitment and persistence).] 47

Organizing Today for the Digital Marketing of Tomorrow. Andrew Parsons, Michael Zeisser, and Robert Waitman, *Journal of Interactive Marketing*, 12 (Winter 1998), pp. 31–46. [Leveraging interactive media for marketing, Opportunities (information delivery, relationship building, channel [dis]intermediation), Elements (attract, engage, retain, learn, relate), Organizational development, Examples, Success, Guidelines.] 48

Interactivity and Marketing Paradigm Shifts. Frederick E. Webster Jr., *Journal of Interactive Marketing*, 12 (Winter 1998), pp. 54–55. [Commentary on article by Parsons, Zeisser, and Waitman (1998), Shortcomings; Customers, their needs, interests, habits, and priorities often are left out; Tactics often precede strategy; Little attention given to basics of market segmentation, targeting, and positioning.] 49

Corporate Strategy and International Environmental Policy. Alan M. Rugman and Alain Verbeke, *Journal of International Business Studies*, 29 (Fourth Quarter 1998), pp. 819–34. [Conceptual framework, Drivers of compliance behavior, Net economic benefits, Resource-based responses, National and international pressures, Regulations, Public policy implications.] 50

Technical Professionals in Cross-Functional Teams: Their Quality of Work Life. Rene Cordero, George F. Farris, and Nancy DiTomaso, *Journal of Product Innovation Management*, 15 (November 1998), pp. 550–63. [Discussion, Hypotheses, Survey of technical professionals, Relationships, Teamwork, Cross-functional work, Job demands, Positive job outcomes, Statistical analysis, Implications.] 51

Innovation Strategy and Sanctioned Conflict: A New Edge Innovation? Barbara Dyer and X. Michael Song, *Journal of Product Innovation Management*, 15 (November 1998), pp. 505–19. [Literature review, Survey of marketing and R&D managers, Comparisons, Prospector and defender firms, Conflict level, Handling mechanisms, Behaviors (integrating, forcing, avoiding, formalization, centralization), Performance results, Statistical analysis, Implications, Electronics industry.] 52

A Longitudinal Examination of How Champions Influence Others to Support Their Projects. Stephen K. Markham, *Journal of Product Innovation Management*, 15 (November 1998), pp. 490–504. [Literature review, Hypotheses, Data collection (champion candidates and team members), Champion tactics, Target compliance and willingness, Project performance, Statistical analysis, Managerial implications.] 53

Enhancing Service Personnel Effectiveness Through the Use of Behavioral Repertoires. Dawn Dobni, Wilf Zerbe, and J.R. Brent Ritchie, *Journal of Services Marketing*, 11 (No. 6, 1997), pp. 427–45. [Literature review, Survey of executives, Specific combinations or patterns of behavior that constitute employee roles, Increasing productivity, Risk-taking, Sensitivity to customer needs, Assessment, Managerial implications and recommendations.] 54

Corporate Name Change Signaling in the Services Industry. Paul Sergius Kocu, *Journal of Services Marketing*, 11 (No. 6, 1997), pp. 392–408. [Literature review, Trend analysis, “Before and after” P/E ratios, Firms that announce name change together with other managerial decisions and regularly release news on other firm-specific activities fared better than firms that did not release such information.] 55

Journal of Small Business Management, 36 (January 1998), pp. 1–29. [Two articles on exporting, Government assistance programs, Effectiveness, Centralization and formalization, Impacts,

Entrepreneurial behavior.] 56

An Investigation of Factors Affecting the Information-Search Activities of Small Business Managers. Rodley C. Pineda, Linda D. Lerner, M. Christine Miller, and Stanley J. Phillips, *Journal of Small Business Management*, 36 (January 1998), pp. 60–71. [Literature review, Survey, Information sources (external, internal), Decision areas, Decision types (product, employee, technical), Perceived effectiveness, Statistical analysis.] 57

Determinants of Business Process Reengineering Success in Small and Large Enterprises: An Empirical Study in the Canadian Context. Louis Raymond, Francois Bergeron, and Suzanne Rivard, *Journal of Small Business Management*, 36 (January 1998), pp. 72–85. [Literature review, Model presentation, Hypotheses, Variables, Organizational support, Compliance with business process reengineering (BPR), Diversity of project resources, Methodological rigor, Advantages of BPR, Statistical analysis, Implications.] 58

Managing Competitive Interactions. Bruce H. Clark, *Marketing Management*, 7 (Fall/Winter 1998), pp. 9–20. [Discussion, Relationships, Identifying competitors, Where they come from, Anticipated behaviors, Obstacles, Personnel training, Scenario planning, Simulation, Actions and reactions, Success, Guidelines.] 59

Searching for Storms Robert S. Duboff, *Marketing Management*, 7 (Fall/Winter 1998), pp. 23–27. [Business design, Developing new products, Building brand equity, Buyer values, Changes, Business analysis, Methods (lead-user, Delphi technique), Future projections.] 60

Match Your Web Organization to Your Mission. Ralph A. Oliva, *Marketing Management*, 7 (Fall/Winter 1998), pp. 38–41. [Framework for managing, Balanced resource allocation, Strategic focus, Management control, Marketing priorities, Assessment.] 61

Real-Time Marketing. Richard W. Oliver, Roland T. Rust, and Sajeev Varki, *Marketing Management*, 7 (Fall/Winter 1998), pp. 29–37. [Discussion, Market strategy, Meeting individual and continuously evolving customer needs, Integrates and extends mass customization and relationship marketing, Assessment.] 62

Purchasing, 123 (December 11, 1997), pp. S5–32. [Eight articles on what the Internet means, Survey of purchasing professionals, Locating/accessing data, Training resources, Internet security, Electronic commerce systems, Procurement cards, Ordering on the Web, Supply management tactics, Pricing and lead time data, Extranet, Intranet, Examples.] 63

Buying as a Core Asset. Anne Millen Porter, *Purchasing*, 125 (November 5, 1998), pp. 44–45, 48–50, 52, 54–55. [Survey of companies, Trends, Supply chain management, Doing a few things well, Advertising value, Rely on supplier to buy, Information technology, Control spending, Speed up product development cycles, Holding prices, Examples.] 64

Get More Customers Now. Sarah Lorge, *Sales and Marketing Management*, 150 (November 1998), pp. 48–54, 56–57. [Business growth, Sales prospecting, Market strategy, Customer relations, Expertise, Strategic partnerships, Acquisitions and mergers, Examples.] 65

Hot Air. Erika Rasmusson, *Sales and Marketing Management*, 149 (December 1997), pp. 54–59. [Meetings, Speakers, Selection criteria, Topics, Costs, Celebrities, Effectiveness, Measures, Success, Guidelines.] 66

2.2 Retailing

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Emerging Trends in U.S. Retailing. David A. Griffith and Robert F. Krampf, *Long Range Planning (UK)*, 30 (December 1997), pp. 847–52. [Study; Changes in consumer markets, price and branding

strategy, store formats, retail institutions, and applications of technology; Managerial implications.] 67

To Market, to Market: The Changing Face of Grocery Retailing. Hean Tat Keh and Seong Y. Park, *Long Range Planning (UK)*, 30 (December 1997), pp. 836–46. [Historical discussion, Changing consumer characteristics, Technological innovations, New product/service offerings, Corporate restructuring, Acquisitions and mergers, Impacts, Marketing mixes, Productivity, Manufacturer–retailer relations.] 68

The Revolution of Retailing: From Market Driven to Market Driving. Nirmalya Kumar, *Long Range Planning (UK)*, 30 (December 1997), pp. 838–35. [Discussion, Changes, Fragmentation to consolidation, Local to global, Merchants to retail brand managers, Traditional stores to innovative formats, Unsophisticated to technology intensive, Vulnerable to powerful.] 69

The Superstore Format in Australia: Opportunities and Limitations. Bill Merrilees and Dale Miller, *Long Range Planning (UK)*, 30 (December 1997), pp. 899–905. [Discussion, Food and nonfood superstores, Retail categories, Adoption rates, Success factors, Assessment of shopping needs, Financing, Store design, Balanced expansion program, Managerial implications.] 70

Have Hypermarkets Had Their Day? Javier Castrillo, Rafael Mira, and Pierre Gurdjian, *McKunsey Quarterly*, (No. 4, 1998), pp. 58–66. [Discussion, Loss of appeal, Competition, Supermarkets, Discounters, Category killers, Success, Guidelines.] 71

Year 2000: Are You Ready? Julie Ritzer Ross, *Stores*, 79 (October 1997), pp. 24–26, 28. [Survey, Computers, Switch to four-digit dating system, Costs, Vendors continue to sell products that are not Year 2000 compliant, In many cases upgrade services not available, National Retail Federation Survival 2000 Project, Assessment.] 72

2.3 Channels of Distribution

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Reading Your Mind, Reaching Your Wallet. Jennifer Lach, *American Demographics*, 20 (November 1998), pp. 39–42. [Web site databases, Online shopping, Personalization, Recommendation technology, Collaborative filtering, Examples.] 73

Business Horizons, 41 (September/October 1998), pp. 5–30. [Three articles on doing business online, Electronic commerce, Models, Success factors, Inhibitors, Supply chains, Internet purchasing behavior, Demand and supply factors, Examples.] 74

Interfirm Relationships in the Supply Chain: The Small Supplier's View. Chickery J. Kasouf and Kevin G. Celuch, *Industrial Marketing Management*, 26 (November 1997), pp. 475–86. [Literature review, Propositions, Survey of auto supply producers, High versus low relationship orientations, Impacts, Company size, Growth, Rate of technological change, Statistical analysis.] 75

How Relational Norms Affect Compliance in Industrial Buying. Ashwin W. Joshi and Stephen J. Arnold, *Journal of Business Research*, 41 (February 1998), pp. 105–14. [Literature review, Model presentation, Hypotheses, Scenario-based experiment using purchasing managers, Dependence–compliance relationships, Impacts, High versus low relational norms, Assessment.] 76

Electronic Commerce Comes of Age. Sherree DeCovny, *Journal of Business Strategy*, 19 (November/December 1998), pp. 38–44. [Trends, Internet strategies, Web sites, Costs, Advantages, Disadvantages, Examples.] 77

Expanding Markets Through Virtual Communities. John Hagel, *Journal of Interactive Marketing*, 13 (Winter 1999), pp. 55–65. [Discussion, Electronic networks, Business models, Types of virtual communities (personal interests, demographic and geo-

graphic, business-to-business), Communication, Example, Leisure travel] 78

Backup Agreements in Fashion Buying—The Value of Upstream Flexibility. Gary D. Eppen and Ananth V. Iyer, *Management Science*, 43 (November 1997), pp. 1469–84. [Manufacturers, Catalog company, Inventory, Lead time, Bayesian updating, Stochastic dynamic programming model, Parallel retrospective study, Data collection, Demand variance, Expected profit.] 79

Purchasing, 123 (November 27, 1997), p. 15–88. [Twenty-three articles on salute to suppliers, Value-added, Cost reductions, Logistics, Inventory services, Cycle time reduction, Customer satisfaction, Packaging, Transportation providers, Outsourcing, Industry standards, ISO supplier certification, Concurrent engineering help, Partnerships, Service agreements, International experience, Examples.] 80

Just How Good a Customer Are You? Jim Morgan, *Purchasing*, 125 (November 19, 1998), pp. 53–54, 56. [Discussion, Characteristics, Commitment, Communications, Price, Long-term goals, Cost concepts, Measurement, Training, Attitude, Assessment.] 81

Perils and Perks of Big Buying Power. Anne Millen Porter, *Purchasing*, 123 (November 6, 1997), pp. 40–45, 47, 50, 52. [Strategic supply management, Supplier relations, Objectives, Standards of performance, Alternatives, Examples.] 82

2.4 Physical Distribution

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The King Is Dead. Jerold B. Muskin, *Business Horizons*, 41 (September/October 1998), pp. 31–36. [Dysfunctional supply chains, Lack of customer focus, Collaboration, Just-in-time production, Limiting number of suppliers, Unification process, Long-term returns on assets, Hypothetical example.] 83

Pulling Customers Closer Through Logistics Service. Theodore P. Stank, Patricia J. Daugherty, and Alexander E. Ellinger, *Business Horizons*, 41 (September/October 1998), pp. 74–80. [Buyer's decision process, Marketing mixes, Operational effectiveness (cost minimization, benchmarking, time-base competition, total quality management), Customer value (customized offerings, customer closeness, alliances), Examples.] 84

Items to Consider for Just-in-Time Use in Marketing Channels: Toward a Development of a Decision Tool. S. Altan Erdem and Cathy Owens Swift, *Industrial Marketing Management*, 27 (January 1998), pp. 21–29. [Discussion, Inventory management techniques, Survey of firms, Factors, Delivery effectiveness, Information system needs, Spatial concerns, Financial resources, Channel cohesiveness, Assessment, Managerial implications.] 85

Supply-Based Strategies, Human Resource Initiatives, Procurement Leadtime, and Firm Performance. Jayanth Jayaram and Shawnee K. Vickery, *International Journal of Purchasing and Materials Management*, 34 (Winter 1998), pp. 12–23. [Literature review, Propositions, Survey of first-tier suppliers to the Big 3 automobile manufacturers, Standardization and employee empowerment are critical antecedents of procurement lead time performance, Interactions, Assessment.] 86

Trust and Relationship Commitment in Logistics Alliances: A Buyer Perspective. Kevin R. Moore, *International Journal of Purchasing and Materials Management*, 34 (Winter 1998), pp. 24–37. [Literature review; Model proposal and testing; Hypotheses; Survey of firms; Buyer's relationship benefits, conflict, trust in a third party, effectiveness, risk of third party opportunism, Third party's information exchange and relationship commitment; Assessment; Implications.] 87

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3. SPECIAL MARKETING APPLICATIONS

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tion processes, Convenience, Expense management activities, Information, Enterprise resource planning, Employee productivity, Examples.] 156

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TERRY CLARK
 Editor
 Southern Illinois University

Book Reviews

A Theory of Shopping

by Daniel Miller (Ithaca, NY: Cornell University Press, 1998, 180 pp., \$41.95 hardback, \$16.95 paperback)

Shopping, Place, and Identity

by Daniel Miller, Peter Jackson, Nigel Thrift, Beverly Holbrook, and Michael Rowlands (London and New York: Routledge, 1998, 214 pp., \$85.00 hardback, \$27.99 paperback)

Through perceptive analysis of British case materials, Daniel Miller and his colleagues enlarge theoretical discourse and the understanding of a pervasive consumer behavior that is as much maligned as it is undertheorized—shopping. The authors insist on the relevance of ethnographic methods and constructs for the analysis of this contemporary, Western cultural form. These authors affirm the enduring importance of what some term the “subversive science” for theory generation. These works exemplify the ethnographic imagination at its best.

Miller’s theory of shopping grows out of a collaborative ethnographic project that examines the relationships among shopping and shopping centers and household organization, gender, social class, and ethnicity. The authors conducted this project during several years in North London. Much of the ethnography is reported in *Shopping, Place, and Identity*, which is a useful prelude to *A Theory of Shopping*. In *Shopping, Place, and Identity*, the authors demonstrate that shopping in shopping malls is not an apocalyptic behavior by which all-conquering market capitalism manipulates ordinary persons through the suasions of the instrumental shopping mall landscape, as some critics would have it. Nor do the authors accept that shopping malls are a polysemic playground of redemptive meanings, as some postmodern theorists would construe them. Instead, following the anthropologist Mary Douglas (see Douglas and Isherwood 1979), they interpret shopping in shopping malls as part of a process by which goods communicate and are communicated as social relationships.

In this volume, the authors make several remedial points that resonate with other ethnographically oriented studies of shopping environments (Sherry 1998). First, not all shopping malls, nor the shopping that takes place in them, are alike. Second, performances by people in shopping malls constantly exceed and even twist the plans of designers and

managers. That is, shoppers exert agency even in controlled commercial environments. Third and relatedly, shopping malls inspire complex and localized affective relations that may include not only flaneur-like hedonistic shopping, but also other forms of identity, most commonly the hard and tedious craft of everyday provisioning. Fourth, shopping malls are part of a broader commercial landscape that includes tourist sites, redeveloped and “themed” city centers, garage sales, farmers’ and flea markets, and other less salubrious commercial places with which consumers engage in complex ways (Sherry 1990). Fifth, the authors offer some intriguing arguments about the way in which nature is appropriated in British shopping environments. Sixth and most important, the authors argue that the materiality of shopping centers becomes a medium for the objectification of ethnic, gender, and other forms of identity in certain conditions. In other words, shopping malls are partly constitutive of the forms these social categories take in contemporary Britain, and in some cases, contemporary Britons use shopping centers to discover, refine, and express gender, ethnic, and class identities.

Several chapters in *Shopping, Place, and Identity* detail these contentions. For example, in “Shopping Policy and Shopping Practice,” the authors uncover a contradiction between the arguments of social critics who insist that malls disadvantage the elderly, the disabled, and the poor because of their edge city locations and the opinions of actual shoppers. The most enthusiastic mall shoppers, it turns out, are the presumably disenfranchised groups. The authors argue that this contradiction reflects the social critics’ unexamined nostalgia for a myth, that of old-fashioned, small-scale, and presumably more authentic retailing, which is not a social reality. In “Shopping and the Fear of Others,” the authors find that shopping centers play a significant role in the formation of social identity. Particular shopping centers become associated with particular social groups, much as the American Valley Girl is a social type defined with reference to the Galleria and other malls in California’s San Fernando Valley. In Britain, malls are “domesticated” shopping spaces with which management promotes an idealized version of the British family at the expense of the exclusion of those who lack an appropriate degree of familiarity. In “Englishness and Other Ethnicities,” the authors develop the point that, through the management of the physical environment, shopping at particular malls becomes a medium through which the ethnic identity of some “hyphenated” Britons, such as Cypriot-Britons and Jewish-Britons and even “British”-Britons, is derived. The authors find that in some

cases there is in-group identification with a particular mall, whereas in others, out-groups identify a particular group with a mall.

So it is against an ethnographically grounded understanding of shopping and shopping malls that rejects simplistic ideological posturing that Miller's *A Theory of Shopping* is positioned. In this carefully and richly argued book, Miller brings together three apparently unrelated constructs: mundane shopping behavior or provisioning, sacrifice, and devotional love. In the first chapter of the book, "Making Love in Supermarkets," Miller establishes the idea that mundane shopping behavior is the ubiquitous form rather than the hedonistic lifestyle shopping of which some authors are enamored. Building on insights from *Shopping, Place, and Identity*, the author shows that mundane shopping behavior is enmeshed in consumer discourse about devotional love. And as it turns out, a commitment to domestic provisioning is linked in turn to the conservative gender roles Miller finds prevail among his middle- and working-class female informants. This finding resonates with previous research in marketing (Inman and Winer 1998; Wallendorf and Arnould 1991). In the second chapter, the author draws the initially surprising analogy between shopping and religious sacrifice. And in the final chapter of the book, Miller develops an historically grounded argument for the emergent role of shopping as an activity through which shoppers constitute relationships with desiring subjects. He argues that women carry out most shopping for the benefit of other household members or in the hope of constituting such members. Indeed, he suggests that the intricacies of consumption practices in the United Kingdom allow for ever more precise and varied objectifications of ever more dynamic and fluid domestic relationships. In other words, shopping choices are ways of trying to stabilize social relationships.

The argument contained in the second chapter, "Shopping as Sacrifice," is an exemplar of the virtues of ethnological inference. Miller draws on classic and contemporary sources on gift giving and sacrifice to ground his analogy with shopping. The logic of the argument is contained in the idea that "in comparing shopping to sacrifice, we are comparing the main form of expenditure and consumption in our society with one of the main forms of expenditure and consumption in many other [non-Western, nonmarket] societies" (p. 98). The analogy continues in three steps. First, similar to sacrifice, shopping focuses on the moment when accumulated labor is transformed into expenditure; "One starts with a vision of excess (p. 99)." Indeed, against the ethnographic evidence, both popular and scholarly discourses presume that shopping consists of excessive and wasteful acts of hedonic materialism fostered by a regnant late capitalism. But this, he shows, is untrue.

Second, sacrifice reserves a portion for both transcendent forces and people and transforms consumption into an investment in transcendent relationships with gods. Similarly, most retail advertising and shopping acts actually are concerned with thrift, with what is saved rather than what is spent, ultimately with a generalized and vague form of deferment. Thus, the rules of sacrifice transform an act of pure dissipation into a constitutive relation with the divine. Sim-

ilarly, shopping becomes "an idealized activity whose sanctity is secured by the ritual transformation into savings" (p. 103). That is, middle- and working-class U.K. women's shopping decisions (with duly noted exceptions) are rationalized in terms of savings. Indeed, the analysis of "Thrift" (pp. 49–62) in Chapter 2 and "Thrift and the Home" (pp. 132–36) in Chapter 3 are among the most compelling in the book.

Miller argues that the unstated purpose of saving through shopping is to constitute a household fund that fuels generalized gift giving to dependents and descendants. This behavior also enables consumers to constitute a fund of possessions that, as Miller points out, are quite similar to the inalienable possessions described by the late Annette Weiner (1992) in their semiotic purpose. These findings resonate with recent research on the disposition of cherished possessions (Curasi, Price, and Arnould 1998).

Third, sacrifice turns away from the divine and returns to the social relations of profane society. This return often is effected through a distribution of a sacrificial meal that sanctifies and reproduces the taxonomic order of society. In particular, the sacrificial meal ritually reestablishes preexisting patterns of hierarchy and difference (p. 106). In shopping, that which has not been given up to the transcendent in the form of savings returns as sanctified purchases distributed to family members. The ethnography suggests that family meals, symbolizing the continuity of the group and of relationships within it, are one of the most desirable forms of distribution of the remains (purchases) of the sacrifice (shopping). (For example, U.S. readers might think of the Thanksgiving meal as the apotheosis of this form of sacrifice.) It is through the diversity and range of commodities consumed that social subjects are constructed in relation to the shopper. Shopping goods constitute the relationships among family members, just as sacrifice transforms dissipation into an objectified social order.

How does devotional love enter the picture? First, in both volumes, the authors marshal evidence to show that an ideology of family shopping, or at least of shopping for family, is a key element of shopping mall advertising. In *A Theory of Shopping*, Miller shows that even single people may engage in a kind of "shopping as courtship" through which the desired other is constituted in part. Second, consistent with related feminist literature, Miller's informants resist an interpretation of shopping as labor and recast it in the language of devotional love. Feminism seems to have affected the shopping behavior of U.K. professional women, but in a curious way. Instead of resulting in the end of the self-sacrificial model of devotional duty, Miller argues that the infant has replaced the husband as the subject of devotion (pp. 123–26). The theoretical links between shopping, devotional love, and sacrifice offer provocative insights into the persistence of conservative gender roles, despite the critique of women's unpaid domestic labor.

A Theory of Shopping is a rich and complexly argued book that, with *Shopping, Place, and Identity*, sheds provocative new light on a maligned and undertheorized behavior that is central to the lives of so many people and to the marketing discipline. The high quality of the books is mildly compromised by three points. The first concerns the

dangers of studying complex cultural systems that possess their own scholarship. Thus, the authors rediscover some of the findings of theoretical marketing literature about shopping venues, shopping, and customer-store and service relationships, for example (Bitner 1997; Sherry 1998). The point is the desirability of engaging marketing practices through both specialized disciplinary lenses and managerial and critical marketing scholarship. Few of the latter sources are referenced in these volumes.

The second two points are stylistic. First, the authorial voice rather smothers that of the informants. Informants are heard from, but not nearly as much as I would like. The books adopt a purely realist ethnographic style rather ignoring the narrative revolution that has infused qualitative research including that in marketing. Second, unnecessary repetitiousness afflicts the solely authored text.

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ERIC ARNOULD
University of Nebraska

Consuming People: From Political Economy to Theaters of Consumption

by A. Fuat Firat and Nikhilesh Dholakia (London and New York: Routledge, 1998, 194 pp., \$75.00 hardback)

Firat and Dholakia's *Consuming People* is an informative, provocative work that makes a contribution to a growing literature that details the relevance of postmodernism to marketing (Brown 1993; Brown and Turley 1997; Firat and Venkatesh 1995). Although the works of such postmodern cultural theorists as Jean-Francois Lyotard (1984), Jean Baudrillard (1988), and Fredric Jameson (1991) have direct and immediate implications for marketing theorists and practitioners, they are only beginning to be diffused in the marketing community. Thus, Firat and Dholakia are to be

commended for making these difficult but relevant and timely ideas accessible.

Significantly, this book also makes me wonder and imagine. The intellectual exercises of the likes of Baudrillard, Lyotard, and Jameson may seem strange or outright hostile to those in a field such as marketing so dominated by science, but they are nevertheless of the utmost importance in making sense of the complexities of contemporary marketing practice and consumer behavior in the turbulent global marketplace. This is a world of immense complexity, contradiction, and change, characterized by the juxtaposition of megamergers; stunning technological development; poverty amidst plenty; ongoing financial crises in Asia, Russia, and many Latin American nations; European reunification and recession; widespread ethnic conflict; and unprecedented stock growth in the United States.

Reading *Consuming People* entertained and disturbed me as well. Thoroughly entertaining are the playful experiments with identity and reality so fundamental to the postmodern epoch. Reading this book takes me back to my early experiences surfing the Web, spending time in MUDs (multiuser domains) and MOOs (multiuser domains, object-oriented), interacting with ... well, to be honest, to this day I am not sure with whom! I recalled the joys and intensity of my own gender-bending and the awe and fascination of my first visits to such market sites as the Mall of America, the NikeTown store in Chicago, and the Denver Stock show. Then, there was the earnestness with which I endeavored to (re)claim my Chicana heritage, and knowing how my father worked so hard to hide his, the experiences of those in his generation were often very painful. The contrast and indeterminacy of all of this—each world colliding in me and somehow mixing in strange ways with others within the kaleidoscopic marketplace—reflect the engrossing and forceful ways marketers and consumers worldwide fashion and refashion themselves and their environs from day to day.

Although many other scholarly writings aim at establishing that this is an era called the "postmodern," as defined in relation to its predecessor, the "modern" era, *Consuming People* is unique and noteworthy in that it tries to extend beyond the necessary task of periodicity. From its roots in modern literary and architectural theory and aesthetics, postmodern thought has spread to a wide array of academic disciplines. This intellectual diffusion has made its mark, drawing from and contributing to fields as varied as feminism (Butler and Scott 1992; Nicholson 1990), poststructuralism (Derrida 1976; Foucault 1980; Lacan 1977), global culture (Appadurai 1996; Bhabha 1994; Robertson 1992), and postcolonial studies (Fanon 1966; Spivak 1988; Williams and Chrisman 1994).

Significantly, what began as a movement in the fine arts, architecture, and literary studies in the 1960s and 1970s gained momentum through the 1980s as a paradigm for transcending previous disciplinary divisions between literary theory and popular cultural studies (Foster 1983; Ross 1988) and broke into the field of marketing and consumer behavior in the 1990s (Brown 1993; Brown and Turley 1997; Firat and Venkatesh 1995). This body of work currently is gaining currency in other social sciences, such as anthropol-

ogy and political science, and in business studies in management. It is only beginning to make significant inroads into economics and psychology, however.

Consuming People is really two books. The first relates the historical development of modern capitalism and consumer culture; the second emphasizes the possibilities of creating meaningful human lives in societies increasingly dominated by postmodern marketing institutions. The difference in content and style of the two parts of the book parallels the differences between the two epochs.

In overview, modernism is dated to the seventeenth century in Western history and marked by a wide range of advancements, including secularism, scientism, representative political institutions, industrialism, and individualism. Its manifestations were wide-ranging in human consciousness and social life, though the focus of study tends to be predominantly in art, politics, work, and consumption. The postmodern period has been dated to the late nineteenth and early twentieth centuries¹ and is marked as much by the calling into question of the previously listed modern tenets, institutions, aesthetic standards and practices, and forms of social life as by its logical progression and even extreme forms (Firat and Venkatesh 1995; Foster 1983; Jameson 1991; Lyotard 1984).

Much of the confusion regarding modernism and postmodernism may be attributed to their overlap and to fairly widespread disagreement regarding their dates and phenomena. Such varied events as the return to spirituality; the challenges to science as the best way to truth; the continued reign of European monarchs and ascension to power of regional Orthodox leaders in contrast with the development of the European Union; the postindustrial economies with their extravagant marketing spectacles, high-tech organizational forms, and service-dominated sectors; the shift from labor to consumption as the site of identity and political agency; and the continued rise of ethnic tribalism dividing nations are cited as evidence of the emerging postmodern.

Firat and Dholakia argue compellingly that the contemporary postmodern era is marked by the recognition that marketing is more than mere business activity, as it was conceptualized during the modern period. Much more. As a central signifying social process, marketing activities have become the dominant mode of discourse. This point, well-established outside of marketing, is yet to be comprehended fully within the field. Documenting this social occurrence is one of the key contributions of the first part of the book.

The second part of the book may appear nothing less than heretical to marketing academics and practitioners. I will go so far as to suggest that this posturing is important to the authors' purpose. Only by imagining other possibilities for capitalism can marketing scholars come to understand and theorize the workings of the present socioeconomic system, with such developments a necessary precursor to improving on them. Postmodern scholars understand the importance of marketing, yet those writing from a perspective outside the field seldom grasp the fundamental demands of

the market on marketers and instead focus on the market as a monolithic force acting on consumers. In contrast, marketing academics are in a position—if they view market activities as an increasingly central social discourse—to interrogate the opportunities and rewards as well as challenges and constraints for marketers and consumers. This is why this book is important.

Marketing scholars and practitioners can learn a lot about modern and postmodern consumers and marketers from this book. The first part establishes a contrast between modern and postmodern beliefs and related consumption patterns. Briefly, modernism is characterized by beliefs in objective reality, the sovereignty of individual reason, science as the primary means of discovering truth, material progress, humans' mastery of nature, and the superiority of rational bureaucratic forms of organization and dualistic forms of thought (e.g., man/woman and marketer/consumer are particularly relevant).

The modern consumption pattern is set within a social context of increased separation of production activities from consumption activities; the former are located in the workplace, the latter in the home. Production is valued over consumption, and subsequently, the workplace is given priority over the home. Modern consumption patterns are viewed as resulting directly from the logic of the capitalist economic system and characterized as individualized, private, alienated, and passive.

In contrast, postmodernism is viewed as a dialectic of social thought and activity developed in response to the problems inherent to modernism, as well as the very success in the proliferation and acceptance of modernist tenets. Postmodernists, then, question the nature of objective reality, preferring instead to attend to its subjective aspects; challenge the efficacy of individual reason, supplanting it with institutional influences and ideological effects; view progress not as inevitable nor solely as the result of scientific activity; prefer decentered, flat organizations and entrepreneurial ventures; and replace dualities with variations along a multidimensional continuum (e.g., male/female replaced by gender orientations combining roles, subjective states, and even physical qualities; consumer/producer replaced with the recognition that consumers produce value, even as producers consume it, and both produce cultural meanings as a fundamental part of their day-to-day activities).

In the postmodern era, the economy retains its place as the prime engine of society. Postmodern consumption patterns are described as culturally diverse, fragmented, increasingly market-mediated, and performative. Whereas in modernity, the locus of agency was housed in the individual, the market becomes the center of all meaningful social activity in the postmodern era. It is this recognition that enables more widespread critical reflection on the consumption patterns of the past and, hence, the present potential to not only understand them more comprehensively by viewing them within their respective sociohistorical circumstances, but also rework them.

Potential is the key word here, because as the authors readily admit, though postmodernism invites the reenchantment of human lives and communities, whether the con-

¹However, some scholars have traced postmodern phenomena to the theatrical markets and royal processions of the seventeenth century (Agnew 1986; Barry 1991)

sumption patterns that are actually emerging will progressively evolve remains to be seen. Further complicating this problem of arrested development is the lack of a complete break from the modern. Thus, the postmodern period and the phenomena accompanying it may entail more of a continuation of modern thought processes and patterns of activity than a critical reflection and intervention altering what has come before.

The authors' articulation of the connections among the production elite, consumption elite, and government elite is a welcome contribution. Most texts focus on these entities separately or emphasize connections between the production elite and the government elite, which severely limits the ability to understand the mechanics of mass consumption. An early example of the focus on elite consumers was Veblen's work at the turn of the century. More recently, Bourdieu (1984) compared the cultural tastes of the upper classes in France with their lower-class counterparts. Both scholars emphasize the way upper-class tastes have developed in counterdistinction to those of the working classes, though Bourdieu extended Veblen's notions of the leisure class to focus on the particular cultural products consumed. However, though both works have provided part of the foundation on which postmodern consumption is understood, neither locates its subject matter relative to the interests of other capitalist institutions such as specific firms and governmental institutions, particularly democratic ones. Even though the authors sometimes undercut the force of their argument by discounting individual motives and interests in relation to elite institutions, this contribution of *Consuming People* remains an important one.

Another contribution of the book is the authors' discussion of the structure of available alternatives for consumption. In shifting attention from individual consumption choices to the existing structural and institutional factors that influence the range of existing market alternatives, a broader understanding of the workings of the capitalist marketplace is advanced. This is exemplified by the authors' discussion of the successful lobbying of the automobile and tire industries for community works programs in dismantling the rail system in Los Angeles in the 1940s and its replacement with the existing system of superhighways that has come to characterize Southern California.

A third contribution of the book lies in its deconstruction of human need hierarchies. The discourse of human needs has served to legitimize the market by elevating the individual and minimizing the institutional and sociocultural contexts within which consuming and marketing individuals are situated. Paradoxically, this has occurred even as marketing practices and consumer behaviors have become thoroughly culturized. Although what may be called the "holy trinity of marketing edicts" remains, that is, enlarging the market, material improvement, and capital accumulation, the means for accomplishing them are increasingly cultural in the form of adding value—specifically, image, character, and community by positioning products/services within people's lives, relationships to others, and relative to other products/services.

Although much of Firat and Dholakia's *Consuming People* was informative and entertaining, some parts of the book disturbed me. Toward the end, the authors discuss the cre-

ation of multiple, alternative communities to the marketing society. Reading this section brought to my mind images of various revolutions—the storming of the Bastille, Simón Bolívar's rebellion against the Spanish in Latin America, the Battle of Little Big Horn, the fall of the Berlin Wall, the toppling of Lenin's statues in Russia. Viewing postmodern developments discussed in this book in comparison with these images, I have to wonder whether it is naïve to expect any future shift away from market power to be any less, to use the terminology of the book, theatrical than the moves toward market power that preceded them. Any less violent.

Writing this review aboard an airplane headed for the Association for Consumer Research (ACR) conference in Montreal,² I was confronted with other images. These were supplied by the airline, as the company does regularly, perhaps hundreds of times daily to its passengers. Choreographed to the tune of *My Country 'Tis of Thee* were splendid images of a colorful forest in autumn, the Disneyland Castle, the Golden Gate Bridge at sunset, a golden cornfield, and the Statue of Liberty. In short, the United States of America was provided to me in a matter of seconds, compliments of Delta Airlines. That marketing activities are increasingly pervasive is beyond reproach. The significance of the increased prevalence of marketing discourses and their increasing centrality to our general social condition should be an issue near and dear to anyone involved in marketing activities or their study for the future possibilities and political realities they herald.

In addition, I found the authors' treatment of consumer agency disturbing. This was particularly true for two of the four core dimensions characterizing modern versus postmodern consumption patterns, namely, level of participation (which ranged from participative to alienated) and level of human activity (which ranged from passive to active). The stereotype of the modern, alienated, passive consumer, follower of directions, always watching or being entertained, is debunked and rejected in favor of a more actively involved postmodern consumer. My question is not so much that consumers increasingly are involved during the cycle from product development to marketing research to advertising copy to product display and delivery. Rather, I question the implications of such involvement. Is participating in research and development and advertising any more or less alienating in itself than the act of choosing from the products and services others make available? Has this altered the exchange of capital?

Distinctions between passive and active levels of activity are somewhat problematic as well. Consumers may be active in reading advertisements or watching a movie, employing such signs and their meanings in expressing their identity and culture. Thus, as the authors exhort, it is important to broaden the sense of the significance of consumers' cognitive, signifying activities and ability to cathect. Yet, there are additional questions to consider regarding the role

²A previous version of this review was presented to a group of postmodern consumer researchers, including Firat and Dholakia. In true postmodern fashion, the group lacks an agreed on name and a definitive structure. During the past three years, it has called itself alternative (AACR), critical (CCR), and heretical (HCR) and meets a day before ACR to discuss issues of interest.

of consumption in empowering consumers. In addition to such measurement issues as accounting for the value added to market offerings in terms of cultural meanings, the inquiry must be expanded to locate who is doing the meaning making, be it a company or industry or its consumers, as well as what is done with such meanings in the context of people's lives. Fundamental questions relate to both sets of agents. For consumers, whether consumption should empower consumers, what the limits of such consumer empowerment are, and what types of consumers are empowered by consumption merit investigation, because it may be that not all consumers are empowered in all acts of consumption. For marketers, the degree to which marketing activities empower as well as constrain them is an important issue in demystifying their subject positions and roles in the contemporary marketplace.

In thinking about consumer involvement in marketing activities and institutions, it is tempting to equate participation with agency. However, there are several pressing—dare I suggest modernist—issues related to the terms of the actual exchange of money and/or other resources between a firm and its consumers. Key for postmodernists is investigating distinctions between market participation by marketers and consumers—specifically, product use, value, and meanings as reflected in marketers' activities, share of market value, and profit versus consumers' expressions of meaning, self, and culture. Attention also must be paid to modernist concerns such as resource allocation, social enfranchisement, and distribution of wealth.

I remain troubled also by the lighthearted play of identities in postmodernity, because so much of it seems so class-based, if not color- and gender-based, and because the postmodern discourse does not seem to capture the gravity and social sanctions that inhabiting many such identities often entails. Subcultural membership appears to be reduced to a voyeuristic stepping-stone in the walk of life, with little or no differentiation between a wide array of consumer subcultures based on ethnicity/race, gender/sexuality, or nationality/region.

Are there really no meaningful differences between the youth movement, gay and lesbian culture, African-Americans, whitewater rafting, and forty-something corporate executives cum Harley bikers? Dress, music, food, and other consumer products are relatively easy cultural conversions for consumers wanting a taste of something different or, in the case of marketers, those seeking to position their products as culturally exotic or adventuresome. Thus, performing culture enters a different realm for subcultural consumers who cannot, will not, or are less able to step out of their skin, gender, or social class.

Still, it is worthwhile to note that many of the civil rights gains of subcultural groups have been brought about through traditional, that is, modernist, political avenues. The many Little Italys, Chinatowns, and Latino/a barrios in the United States were bred as much by self-selection as by discrimination and segregation in housing codes and other business practices. At present, such modernist approaches as boycotts and legislation appear more likely to reverse previous civil rights gains than to further them, despite what post-

modernists profess as a climate of more tolerance of diversity in the postmodern era.

Returning to Firat and Dholakia's premises, they suggest that the political implications of consumption in the postmodern era are shaping up to be different from those of the modern era that preceded it. Yet, it is not so clear that the societies emerging at present will be any more socially progressive and inclusive. Although it may be an effective research strategy to equate minority ethnic, racial, and gender subcultures with groups organized around consumption, because the latter are inherently more accessible, generalizable, and arguably interesting to the marketing field, doing so seems to trivialize the history and current conditions of many of the ethnic and racial social groups mentioned previously.

Finally, it is alarming to find the erosion of power in the contemporary postmodern nation-state, accompanied by the ascension of power by the multinational corporation, for the former social institution has been the chief avenue for increasing citizen and consumer enfranchisement of women, persons of color, and gays and lesbians, as well as the driving vehicle for greater consumer rights and environmental protection. In the contemporary global economy, the state does seem to be the most promising entity to remedy those areas in which the market cannot or will not fulfill certain needs but instead creates problems, though historically, concomitant with growing institutional power has come added social responsibilities. Those ugly externalities of modernity—pollution, resource depletion, endangered species and ecosystems, poverty, homelessness, and crime—do not appear to have an end in sight in postmodernity. The undoing of the nation-state is at least partly the result of politically motivated attempts to dismantle it by corporate agents, even as its success domestically and internationally in reforming, regulating, and stimulating business activity goes unappreciated. It would not be an exaggeration to suggest that in the United States and other countries, governments have cocreated with business the status quo of capitalism as it exists, though antagonisms between these two powerful institutions triumph in conventional thinking.

In marketing, dialogue is needed about what the future might be, with and without the market. The story of Plato's cave insightfully illustrates the limitations inherent in comprehending realities other than the one in which marketers find themselves. Simply told, the story is about a people who lived in a cave. Because they were unable to leave the cave, all of their knowledge was comprehended in terms of shadows. One day, a brave person ventured out and experienced the vast array of light and colors outside the cave, yet when he returned to encourage others to join him, no one would do so because they could not comprehend life other than as they had known it.

For most of this century, socioeconomic life has been conceptualized in the cave of contrasts between capitalism and communism. In the post-Cold War era, this dichotomy has broken down, and though no significant "other" has emerged to take its place, there may be alternative forms of capitalism that are more complementary with a democratic form of government. Firat and Dholakia are less than explicit regarding these other possibilities; nevertheless, in

writing this text they have taken a welcome step in an important direction. Although their ideas about a world without the market may be criticized as utopian, many useful social ideas are utopian in nature, and the hope conveyed in this word remains a powerful signifier in a contemporary world of signs.

Returning to notions of play and diverse cultural expression in the postmodern marketplace, I do not doubt that some progressive multicultural ideals accompany the adoption of dreadlocks and tango music, and I like the notion of living out multiple identificational and communal possibilities. The alternative, namely, reconciling various complex, contradictory manifestations of identity and community, is all too often as overly demanding as it is ultimately futile, both in terms of personal and collective development. The question remains whether a society can thrive without social commitments. That is the ultimate question posed to scholars of postmodernism. There I am not so sure, but I wonder. At a fundamental level, living the possibilities of many cultures may entail not being committed to any single one.

In summary, *Consuming People* is a valuable resource for marketing academics and practitioners facing the inevitability of grasping the contours and significance of the contemporary postmodern era. The book is well documented historically, accessible without diluting its content, provocative, and imaginative. Perhaps as important to those not yet convinced postmodern thought has a place in marketing, it accomplishes this important task while avoiding the glib tone, farcical style, and cryptic language that has become identified with much postmodern work.

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LISA PEÑALOZA
University of Colorado, Boulder

Winning the Global Game: A Strategy for Linking People and Profits

by Jeffrey A. Rosensweig (New York: The Free Press, 1998, 258 pp., \$30.00)

For the long-term strategic planner, the world is a gloomy and perhaps dangerous place. With the meltdown of Southeast Asia's banking system (and its threatened spread far and wide), the chaos of Russia's economy, the inertia of Japan's political will, the uncertainty of Europe's push toward a common currency, the never-ending bleakness of Central Africa, and the combined effects of all of these issues on the United States as even its economy seems to be slowing down, where do people turn for an optimistic view of the future? A partial answer may lie in Jeffrey Rosensweig's highly readable and perpetually hopeful *Winning the Global Game: A Strategy for Linking People and Profits*.

Rosensweig's sanguine picture of global prospects is based on the idea that more open (democratic) capitalistic economies can help the world's people and firms' profits (the "virtuous circle" of global development). However, he also makes clear the possibility of an alternative dark side scenario (the "vicious circle" of global development), in which population explosion, environmental degradation, lack of education, and low productivity lead to consequences that few would want to contemplate. The key to the brighter sides rests with the long-term planners' foresight to lead the charge into the light. Bravo for the bright side!

For managers looking for the insightful nuggets to guide short-term, global market selection criteria, this is not the book to read. This is not a book of prescriptive advice for strategies to weather the gathering storm clouds of a worldwide economic downturn. Likewise, it is not a book for detailed analysis of global partnering or industrial alliances or of consumer psychographics, behavioral intentions, motivational values, or benefits sought to give insight into future firm-level global expansion. Rosensweig paints with a much broader brush, presenting insight for the long term—where

future global markets will lie and why firms should be thinking about them. To achieve his effect, he relies primarily on macroeconomic indicators of market growth and potential and on demographic projections of population growth. Similar to bank robber Willy Sutton's explanation of why he robbed banks (because that is where the money is), Rosensweig's explanation of why firms should be thinking about entering risky markets is because that is where the long-term future profits are; to which he would add, "and because it's the right thing to do."

The book accomplishes what it explicitly sets out to do: identify "trends of globalization in the world economy and ... [outline] strategies firms and individuals might employ to profit from these trends" (p. 1). Beginning with a parsimonious definition of globalization (trends in both international trade and international investment transactions), Rosensweig goes on to dispel any notion that globalization is nothing more than "globaloney." For the reader new to globalization theory, the book's account of why globalization is happening (advances in communication and information technologies and institutional progress in removing barriers to international trade) and whether it can be expected to continue (yes) provides savory food for thought.

As noted, this book focuses on the long-term global outlook. For example, Rosensweig cites figures that indicate that infrastructure investment needs in developing countries over the next ten years will be huge—East Asia requiring \$1.4 trillion, China \$700 billion, and Latin America \$600 to \$800 billion. The strategic implications of such figures are clear and should get the juices of any long-term planner flowing. But Rosensweig is a well-trained economist (Yale University, *summa cum laude*), and he knows as well as anyone that global commerce is subject to cyclical gyrations. The pessimistic reader, steeped in the short-term doom and gloom views pervading today's global landscape, might cast a skeptical eye on this work. But for a rosier, broader, more balanced view, Rosensweig is a welcome tonic.

So how does the story progress? Focusing on regions and roads to globalization, the book makes the case that those countries with the highest levels of global integration (again, trade and investment) tend to have the fastest output growth and the highest standards of living. Thus, the justification of one of the book's two major themes—globalization as the right thing to do—is established. The spread of a more truly global international business network, bringing wealth and opportunity to the 80% of the world currently left out of the party, is not only the right thing to do but, as the book explains, the smart thing to do.

The second major theme of the book is established by profiling the world's countries according to their respective "total world trade" (exports plus imports). What results is a rather striking new perspective map from which four points are made. First, Western Europe is the center of international business, because it is the largest single bloc in a global trading sense. Second, the United States is the largest nation when measured by total trade. Third, Japan emerges as a huge nation on the map because of its massive international trade involvement and its pivotal position as the anchor of an East Asian bloc. These three points reinforce the often

cited idea that international business is essentially composed of a triad dominated by Western Europe, North America, and East Asia. However, it is Rosensweig's fourth point that is perhaps the most poignant and insightful (and also sets groundwork for the second major theme of the book).

In a nutshell, Rosensweig's fourth point is this: Although the vast majority of international action is in the Northern Hemisphere today, the major players of tomorrow will be in the Southern Hemisphere. Wise planners are advised to consider this reality and deepen and broaden their globalization strategies. Clearly, much of the international business action takes place among the northern triad of Western Europe, the United States, and Japan. However, contrast this map with one based on population, and China, India, Africa, the Mideast, and South Asia emerge as dominant while the triad shrinks dramatically. The lesson here is that in terms of population, the major players are south of the traditional triad. A persuasive argument thus begins to emerge: Long-term planners, currently focusing only on the triad markets, should begin to look seriously at where the growth markets (driven by explosive populations) of the twenty-first century will be.

The global deepening and broadening strategy is explained further by dividing world markets into a reconceptualization of three familiar categories: First World, Second World, and Third World. The first category (First World) is the industrialized trading nations that are distinguished by being linked in a global informational technology network (thus labeled ITNs). They represent the bulk of world trade and contain the vast majority of the world's information technology resources. The 26 nations Rosensweig includes in this group are the current 15 members of the European Union, as well as Switzerland and Norway, the United States, Canada, Japan, New Zealand, Australia, South Korea, Taiwan, Singapore, and Hong Kong.

The second category (Second World), called Big Emerging Nations (BENs), comprises 14 nations emerging as key international business players. These have large populations and/or rapid trade growth and economic development. The BENs are Indonesia, the Philippines, Thailand, Malaysia, Vietnam, China, India, Brazil, Mexico, Argentina, Chile, Poland, Turkey, and South Africa. These nations account for more than half the world's people and have dynamic sustained growth (two key drivers in analyzing the fundamental opportunities and challenges in the twenty-first century).

The third category (Third World) are called the Unlucky 13. In this category, population growth is and will continue to be explosive, resulting in additional millions of people by the year 2030 (indeed, each of the 13 will have a population exceeding 52 million people by 2030). These nations often are ignored by business but eventually will command its attention. They include Ukraine, Russia, Afghanistan, Myanmar (Burma), Egypt, Iran, Pakistan, Bangladesh, Nigeria, Ethiopia, the Democratic Republic of Congo (formerly Zaire), Tanzania, and the Sudan. Using a set of insightful figures (e.g., market size as measured by traditional gross domestic product [GDP] versus the more contemporary purchasing power parity [PPP]), the book develops a compelling argument that wise long-term planners must develop strategies of inclusion that are well grounded in the First

World, expand into the Second World, and establish contingencies for the Third World if significant and sustained growth opportunities are to be had in the twenty-first century. Where consumers can be found, the goods they will demand, the infrastructure they will need, and the productive capacity they will represent make this argument potent for those with vision. Indeed, extending the triad, or more to the point, extending the scope of planners' radar screens to include other, less traditional countries and regions is perhaps Rosensweig's central message to those seeking an alternative path for global business strategy.

The book also argues persuasively that, though firms would be remiss to summarily dismiss the "nation-state" as a focal point of their global market expansion plans, they should start to think in terms of "regional states" (e.g., Hong Kong/South China, San Diego/Tijuana), which are huge economic zones that may not fall within the borders of a particular nation. Going beyond Kenichi Ohmae's well-known concept of "micro regions" (which typically have between 5 and 20 million people integrated across national borders by economic and social ties; see Ohmae 1995), the book also makes a case for focusing on "macro regions," which are of an entirely different order of magnitude because they will contain populations greater than 500 million people by the early twenty-first century.

While succinctly describing the coming extensions to the traditional triad of global markets (the integration of the North and South American, European, and Asian-Pacific regions through 2010 and 2025), Rosensweig again provides compelling population and market figures for consideration of a fourth region, the "populous south." This region is made up of inland China, Africa, South Asia, and other areas that remain outside the main network of international business today and, again, will constitute significant opportunities (half the world's population will be in this region) in the future. Being a marketer (as opposed to an economist), I also would encourage long-term strategic planners to think about pan-regional and global consumer segments as they contemplate their firms' future directions.

Rosensweig spends considerable time detailing the reasons the populous south represents significant future business opportunities and why long term-planners must include this region in their time-phased global expansion strategies. For example, he notes that (1) 95% of world population growth is occurring in the developing or lesser developed nations; (2) every 37 seconds, the world adds approximately 100 people, 95 of whom are in the populous south; (3) the 15 nations of the current European Union have a projected absolute decline in population after 2000 (they will fall from 6.6% of the world's population in 1994 to 4.33% in 2030; the North American share falls from 5.3% in 1990 to 3.9% in 2050); (4) at current rates, Japan's population will tumble to 55 million by 2100, down from 125 million today (further, albeit ridiculous, extensions of this trend lead to predictions that, by the year 3000, Japan's population will have dwindled to 45,000); and (5) Australia, which many global business planners have added to their radar screens in the 1990s, has a total population of 17 million, which is less than the annual growth in India's population.

The results of these changes in the traditional triad of global markets (Western Europe, Japan, the United States) are predicted to be smaller work forces, shrinking consumer markets, and declining economies. Again, the implication for planners searching for long-term growth opportunities is to look to the populous south, where the future human potential, in terms of resources, workers, and markets, lies. Rosensweig predicts a new triad for the twenty-first century, made up of China, India, Africa, and others in the populous south, and urges visionaries to include a demographic focal point rather than a strict industrial and trading power focal point in their equations for future expansion opportunities. Indeed, what Rosensweig is arguing for is the perhaps overly used phrase, to "think outside the box." That is, far from being a lost cause, the populous south represents great opportunity in the twenty-first century, where profits, along with human development, can be achieved if long-term planners can function beyond the traditional parameters that guide their growth and investment strategies.

But how can this be possible? Do people not read daily about the degradation of human conditions and environmental realities in such places as Africa, Bangladesh, Pakistan, and other parts of this populous south? Is Rosensweig fixated on population? What about purchasing power in these so-called emerging markets? Again, Rosensweig presents persuasive arguments for being optimistic and, more to the point, for company planners to think seriously about adding the populous south to their time-phased global strategies. The groundwork for optimism is laid by detailing both the cultural/sociological (reliance on family and community and respect for hard work, saving, and education) and the macroeconomic (welcoming of foreign investment, an openness to international competition, a tax system that encourages entrepreneurial activity, and cooperation between government and industry) reasons that together form the model behind the recent decades of phenomenal growth and high performance in Asian economies such as Japan, Singapore, Taiwan, Hong Kong, and South Korea (and, until more recently, Indonesia, Malaysia and Thailand). This model, claims Rosensweig, is now being followed by the likes of Brazil, Argentina, Chile, Mexico, and others (and is being studied by many other Asian states and even African nations). As such, similar growth patterns are predicted for these populous southern nations, and tomorrow's customers (roughly three out of every eight people in the world with purchasing power) are just around the corner (that is, the year 2010).

Blending optimism with rationalism, the final nugget of prescriptive strategic advice offered by this book is that, though establishing a global presence is an ultimate goal, few firms have the resources to go global all at one time. As such, planners with a clear vision of today's and tomorrow's customers (and knowing their firms' core competencies) should consider a time-phased approach to their global expansion. Six "great economies" (national and regional) of the twenty-first century are offered up for thought. These economies, which roughly account for a GDP of \$30.6 trillion today, will account for \$90 trillion in 2030. If Rosensweig is right, the regions that include the Americas, the emerging Greater Europe, Japan, China and Hong Kong,

the nine nations linked in the Association of Southeast Asian Nations, and India contain the markets on which to focus. For those planners content to focus on the traditional triad, Rosensweig suggests that "instead of perching global business on a shaky stool with only three legs ... [you] may be able to have a very firm stool with six legs" (p. 165).

The book ends with a series of sensible ideas regarding the traits and characteristics that global managers must possess if their firms are to survive and truly prosper in the twenty-first century. Again citing the slowing of population growth in the traditional triad markets and the subsequent need to focus on market diversification if growth is to be sustained, the book's conclusion elaborates on the need for skilled managers who can capitalize on the developing global opportunities while avoiding the pitfalls and hazards inherent in such environments. The key question here becomes: What are the attributes and capabilities that firms must consider in applicants when they want to promote or hire managers in today's interconnected economies?

Stating that it is no longer sufficient to have gone to the "right school," be "our type of guy," be "networked," or even be a "loyal follower," Rosensweig articulates 12 needed competencies of a global manager, gleaned mainly from his own personal observations and informal interviews. His list runs the gamut from possessing a broad and deep education that involves multicultural competencies to exuding personal traits of integrity, character, ethical values, flexibility, energy, and a skilled communicator to having a command of information systems, technology, and several key languages. Offering many examples of business leaders who possess these skills, this section of the book provides a highly insightful and valuable profile of what the twenty-first century global business leader will look like. A personal development guide (worksheet) also is provided to aid would-be global managers in their own self-assessment and professional development with respect to these traits. All in all, this is probably the most practical offering of the book as a whole, one that should be highly valuable to managers seeking global careers and academics charged with preparing students for global management positions.

In the final assessment, I must ask, "Would I recommend this book as a must-read?" A recent article in the *International Herald Tribune* (1998, p. 13), entitled "Globalization: A Dream or a Deadly Fantasy?" states that "[N]ow that the financial crisis has spread from Asia around the globe and even threatens the economic health of the United States, there is a realization dawning in executive suites and on Wall Street that 'globalization' is full of peril as well as promise." It goes on to elaborate on how many top-tier multinational corporations have announced they are suffering because of exposure to global markets and are retreating from their international expansion plans. The article also notes that many of these companies find their stocks being shunned because of their global exposure. The article's overriding theme is that globalization is becoming a "bad word" and that there is a "tremendous hype about emerging markets." However, the article ends by noting that "the presence of millions of people who long for many of the consumer staples and industrial products favored by Western nations will prove too powerful a lure to resist" (p. 17).

I, for one, believe this is true. As such, I would be remiss if I did not recommend *Winning the Global Game: A Strategy for Linking People and Profits* as a must-read for those planners looking at the future in terms of profits and meaningful contributions to a globalizing world.

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VAN R. WOOD

Virginia Commonwealth University

The Entertainment Economy

by Michael Wolf (New York: Times Books, 1999, 314 pp., \$25.00)

All Business Is Show Business: A Review of *The Entertainment Economy*

There is a widely accepted notion that entertainment and business exist in two separate realms. Entertainment is done during leisure time, business during work time. However, there is growing evidence that the two realms are becoming increasingly mixed. In his new book, *The Entertainment Economy*, Michael Wolf takes this point a step further by arguing that entertainment dominates the modern global economy. He has the credentials to back up his argument. As the founder and senior partner of the Media and Entertainment Group at the management consulting firm Booz-Allen & Hamilton, he has consulted with many legendary media moguls. In the process, Booz-Allen & Hamilton has established a reputation as one of the leading management consulting firms in the entertainment industry.

The book provides much evidence that entertainment and media have moved beyond culture to become the driving wheel of the global economy. For example, children no longer go to McDonald's for food but rather for the entertainment value defined by its toys and play structures. Similarly, shopping malls have become theme parks, and retail stores are entertainment venues as much as shopping outlets.

The list goes on, wandering far away from traditional entertainment products such as films, television, and the Internet. As Wolf notes, "Across a whole set of industries—including many that have traditionally had nothing to do with entertainment—an infusion of entertainment content, what I call the E-Factor, is increasingly playing a fundamental role in determining which stores we shop at, what airlines we fly, the restaurants where we eat, what clothes we wear, which pots we cook with, which computers we use" (p. 50). Some of the major "E-Factor" companies and their products are well known to almost everyone. Here are some E-Factor companies mentioned by Wolf:

- Hotels: Delano (Miami), Mandarin (Hollywood), Royalton (New York);

- Restaurants: Hard Rock Café, Planet Hollywood, House of Blues,
- Cruise ships: Disney Magic;
- Airlines: Virgin Atlantic, Singapore Airlines;
- Grocery stores: Stew Leonard's, Somerfield (a U.K. chain);
- Retailers: REI, Nike Town;
- Fashion: Tommy Hilfiger;
- Books: Borders, Barnes & Noble,
- Autos: Oldsmobile's Silhouette Premiere;
- Wal-Mart: Broadcast of a live Garth Brooks concert in 2400 stores;
- Banks: Citibank with its Elton John advertising campaign and Sony credit card; and
- Finance: Bloomberg television, radio, and monitors.

One of the key themes that emerges from *The Entertainment Economy* is the increasing difficulty of standing out in a media- and product-saturated world. In this new environment, Wolf notes that consumers face an avalanche of choices. Brands crowd the commercial scenery, placing customer time and attention in high demand. In addition to a media clutter best exemplified by the proliferation of cable television channels, there has been a concurrent product proliferation. Wolf provides a few interesting statistics of this rise in product clutter:

- 10,000 more books published in 1998 than in 1993,
- 30,000 music albums released in 1998 (only 2% sold more than 50,000),
- 900 new magazines launched in 1998, and
- Feature films released by majors increased by 80% in ten years.

With this increasing flood of media and products, as well as the increasing number of companies practicing the E-Factor, just getting noticed (let alone making the sale) is becoming more and more problematic. Wolf observes that, "Given the pervasive impact of entertainment in our economy today, companies must exceed the efforts of their competitors to amuse, arouse, and inform customers. In other words, companies need to provide entertainment experiences that engage consumers" (p. 54). Large mainstream businesses, though, seldom possess this entertainment expertise "in-house," and therefore, the quickest route to an E-Factor company for them is hiring top management from the entertainment industry. This has caused an influx of entertainment executives into traditionally nonentertainment companies. A few examples: Disney executive Richard Nanula leaves to run the Starwood hotel chain, Viacom executive Ed goes to Citigroup, and NBC's Warren Jensen goes to Delta airlines.

Yet possessing internal entertainment expertise is seldom enough by itself. There still exists a need to look outside the company and exploit synergies its products have with various media. Crossover tie-ins among retail, film, television, food, music, publishing, and the Internet become increasingly important in creating brand empires and break-out products. The lesson learned by McDonald's is instructive here. As Wolf notes, "When McDonald's realized that Burger King was cleaning its clock with its *Lion King* and *Pocahontas* promotions, it stepped up to the plate and com-

pleted an exclusive ten-year, multibillion-dollar marketing and promotional partnership with Disney. Their logic: Disney film equals major family entertainment phenomenon equals major boost in families eating at McDonald's to get *101 Dalmatians* snow domes, *Hercules* figurine sets, and *Mulan* action figures" (p. 55). The result of the Disney/McDonald's alliance was a 23% increase in production of Happy Meals in the United States. This made McDonald's, by volume, the world's largest distributor of toys. The Disney alliance officially began in 1997. In that year, McDonald's experienced a 7% increase in sales, resulting mainly from its movie tie-ins.

Apart from the increasing synergy needed in the brave new world of the entertainment economy, businesses must be aware of new business cycles created in an entertainment environment. Wolf warns that "by incorporating entertainment content, businesses will more become subject to the compressed, hit-driven business cycle of the entertainment business. Things will be cool, and then they won't be. To expect businesses to abandon this dynamic and try to escape the new exigencies of doing business in the entertainment marketplace is like hoping that banks will go back to barter" (pp. 73-74). In this new environment, Wolf predicts that businesses will grow and die more quickly.

Planet Hollywood offers a good example of this new quick rise-and-demise scenario. The entertainment strategy of the chain was built around the "nostalgification" of culture, in which people went to the restaurant to see entertainment memorabilia as much as they went for the food. "When sales plummeted as the public finally figured out that the display jackets that were worn by the cast of *Grease* probably tasted better than the chicken fried in Cap'n Crunch batter, marketers were put on notice that entertainment, though necessary, is no substitute for quality in the core product" (p. 74). In contrast, Disney has an excellent understanding of this business cycle. As Wolf notes, "Disney knows that about every seven years the sixth-grade class that graduates from grammar school is replaced by a whole new generation entering kindergarten, and it will re-release *The Little Mermaid* or *The Jungle Book* videos to coincide with that cycle" (p. 93).

The new business cycle brought about by the entertainment economy, though, extends far beyond theme restaurants such as Planet Hollywood or even the monolithic Disney Company. Wolf suggests that major economic structures, such as the stock market, feel its repercussions, "So rather than a more orderly market we are just as likely to see one in which stocks rise and fall more like hit movies—which, come to think of it, has been exactly the way a lot of the hot technology stocks have hit the market: they open big, purely on the basis of buzz, and, if they connect with an audience, they can continue to generate the excitement of a blockbuster" (p. 79).

Yet, with all the glitz and glitter of entertainment, the cycles and synergy, it is often difficult to remember that making money remains the goal of the entertainment economy. Here, Wolf notes that there are still only a handful of ways to build revenue in the entertainment and media industry:

- Selling admission to a venue,
- Selling subscriptions,
- Selling audience access, or
- Selling products directly.

The first, based on admission, is exemplified by amusement parks, as well as pay-per-view cable television and adult Web sites. The second, based on building subscriptions, is used by HBO and *The Wall Street Journal Interactive Edition*. The third method of selling audience access is the advertising side of the media business exemplified by Internet portals such as Yahoo.com. In the fourth, money also is made in media by selling products directly, as Amazon.com does.

One of the 1990's most successful companies to use the E-Factor to build revenue has been Tommy Hilfiger. As Wolf notes, of all the fashion moguls that have sought the power of entertainment and celebrity, none has done it more effectively than Tommy Hilfiger. The brand has revenues of nearly \$850 million, yet it hardly existed ten years ago. The key marketing strategy behind the Hilfiger phenomenon has been the use of celebrities to promote its products. The celebrities Hilfiger focused on were the idols of African-American city kids. Wolf notes that "Americans—and after them the rest of the world—have drawn generation after generation of styles from this culture. Cool, rebellious, young, hip ... it has all the things the rest of the world's youth wants to be. When the sports and music stars who are the aspirational images for this culture started sporting Tommy Hilfiger clothes, the brand got their seal of approval.... Capture these key taste generators, and you capture the young. Capture the young, and you have set the trend for the rest of society" (pp. 65–66).

The first celebrity targets for Hilfiger were rap stars such as Snoop Doggy Dogg, Mobb Deep, Dr. Dre, and Little Vicious. The Hilfiger label began to appear in rap videos on MTV, and the Hilfiger name was appropriated even into lyrics. Hilfiger next courted Sheryl Crow and created a wardrobe for her tours. He did the same thing with the Rolling Stones and their "Bridges to Babylon" tour, designing more than 100 pieces of clothing for them. And, when Rebecca Romijn took over from Cindy Crawford as host of MTV's *House of Style*, Hilfiger bought her in as the female image for his advertisements.

After creating the Hilfiger brand image in fashion, Hilfiger worked to leverage the brand name into other areas outside clothing, like any good E-Factor company should. There are now Hilfiger shoes, pajamas, underwear, wallets, eyeglasses, golf wear, and men's fragrances. In fact, Tommy Cologne accounts for 10% of the global market of men's fragrances. The result is that, by mid-1998, the Tommy Hilfiger brand was ranked in the five "coolest" brands category among consumers 12 to 19 years of age.

It Is All About Stories

Ultimately, Wolf's book is more enticement than explanation. Readers come away believing what he says but with little idea of what to do. Wolf dangles the proverbial carrot. That he does not deliver the "how-to" should not be a sur-

prise; he makes his living consulting, not writing books. Therefore, readers should not expect him to give his product away. His purpose is to provoke rather than answer questions.

The result is that *The Entertainment Economy* leaves readers with interesting food for thought. At the end of the book, Wolf waxes philosophical with the observation that "[u]ltimately, it's really not about corporate behemoths, mergers, or finances, or the box on top of the TV set. It's about stories that move us, characters we can root for, ideas that transform the cultural landscape, special effects that take us to a world we've never seen before, situations and lines that make us laugh, and ideas that are universal, they forever change the way we live" (p. 295). Although it takes a certain amount of imagination to discover hidden synergies between products and media, for Wolf, the major purpose of imagination is in the creation of stories rather than the discovery of business synergies. Entertainment is really about stories. As he notes in the final words of the book, "Humanity makes it impossible not to take notice of great stories, whether they are told around a Neolithic campfire or in the cathode-ray-glow of the digital hearth. It all starts with a well-told 'Once upon a time...'" (p. 296).

Wolf ends his book (as all good movies end) by setting up the possibility for an interesting sequel. By claiming the major business of the economy is creating stories, there is the interesting yet inescapable inference that the most successful businesses are those that create the best stories. Just how businesses create stories is a worthy topic for a forthcoming book from Wolf. Readers should not hold their breath though. After all, Wolf's firm has a vested interest in keeping this information "in-house." This is understandable for a management consulting firm, for which books by partners are a type of "bait" to bring in clients. Still, he raises some interesting questions. And there is no need to wait for Wolf's sequel to explore them.

The Key Stories of Our Times

With the growth of megamedia forces, such as the Disney Company and Time Warner, there is a temptation to believe that these entertainment conglomerates create the key stories of our time. But do they create the stories, or are they simply better at tuning into the prevailing zeitgeist and then exploiting it better across multimedia platforms? In this sense, a company such as MTV is better at predicting the entertainment zeitgeist than in filling it with stories. Understanding the dynamics of entertainment structure becomes more important (at least for MTV) than creating the content to fill this structure. Predicting what the story is (or will be) might be a powerful new business tool by itself.

One of the dominant themes in modern marketing is differentiation. The argument is that success is based on standing out from competitors in an increasingly crowded marketplace of consumer products. But it is possible that success might come more from alignment with a story zeitgeist of the times than from differentiation from competitors.

How can the present and future story zeitgeist be determined and discovered? There are thousands of different stories at any given time, but only four key dramatic story

modes: tragedy, comedy, satire, and romance. Popular film and literary genres ultimately revolve around these dramatic modes. Stories are always subject to classification within these key genres. There might be a cyclical nature to prevailing genres. For example, the literary critic Northrup Frye suggested in his *Anatomy of Criticism* that genres are related symbolically to the seasons. Might there exist a set cyclic sequence of leading story genres? Are the most successful businesses and products the ones that are in the best alignment with these cycles? These are questions Wolf hints at but does not answer.

Business Leaders as Storytellers

Many scholars have argued that great business leaders are often great storytellers—they create compelling stories for their organizations. Renowned education theorist Howard Gardner of Harvard has undertaken a major study that focuses on outstanding leaders. In *Strategy & Business*, Gardner (1999, p. 91) notes that the basic finding of the survey was that “leadership involves the creation of powerful narratives, narratives that are much more than mission statements or messages. They are actually stories where there are goals and obstacles, where good and bad things can happen along the way and where the people involved feel part of the enterprise that’s trying to end up in a better place.”

Similar to the heroes in stories, corporate leaders create a sense of drama, conflict, and eventual catharsis in building a corporate mythology. In effect, corporate visionaries understand the key elements of building a strong story, whether consciously or unconsciously. The elements could be picked up from a book on drama or screenwriting. They include subjective aspects centered around setting (time, place, space, color, elements) and objective aspects based on action (hero, action, objects). Pervading all is the drama of conflict, or the age-old battle between the “good guy” and the “bad guy.” Perhaps one of the key qualities of the great business leader is that he or she can articulate the story and drama of his or her company so all employees can gain a sense of the heroic.

Business as Film Production

As business in the digital age moves more toward outsourcing through the increasing use of part-time employees, many companies, in effect, become similar to film production companies that bring large numbers of people together temporarily for projects. Many traditional businesspeople might laugh at the crazy way films get made in Hollywood. But in the end, Hollywood might have the last laugh.

The cast and crew of a film is a great metaphor for consultants and project teams brought temporarily together inside traditional businesses. From all indications, these temporal groupings are becoming the dominant method of modern business. There might be something traditional businesses can learn from Hollywood after all.

In this model of organization, human resource people and venture capitalists play increasingly important roles. They are comparable to Hollywood agents and production companies, in that they match the right people with the right

projects at the right time (little wonder that relational database programming has taken off on the Internet).

Corporate Strategy as Screenplay

Wolf argues that marketing plans are becoming passé. They lock the firm into a static structure during periods of dynamic change during which relationships move from vertical to horizontal and simultaneous events possess more importance than linear, causal events. In this new dynamic world, an appropriate metaphor is found in the screenplay. In this scenario, the product is the hero, the product/brand manager the director, and the product team members the cast and crew. The competition becomes the antagonist, or the bad guy. Motivation involves how well the conflict between the good guys in one corporation can be articulated against the bad guys in the other corporation. This amounts to discovering the drama of the situation, creating the best story for the situation, and finally telling the story most effectively to the corporate cast and crew. The drama of stories is universal, and it is apparent in an entertainment economy that this drama happens outside movie houses.

Entertainment as the New Business Paradigm

These ideas lurk beneath the surface of Wolf’s fascinating new book like the subtext of a movie or the subliminal aspects of an advertisement. Final answers are not provided in *The Entertainment Economy*, but all businesses should know that they at least exist. The greatest brands and E-Factor businesses use them, many without a conscious awareness or understanding of what they are doing. For now, it seems important to consider the possibility that entertainment is not something that takes place solely in Los Angeles through deals between stars and studios but rather something that happens every day in a wide range of businesses in Main Street, America. Everyone is in the entertainment business.

The service economy that business commentators have indicated the United States is moving toward for several years might be defined better as an “entertainment service economy.” Despite the digital industry’s ongoing public relations campaign to label this the “information age,” the consideration of things from the perspective of an “entertainment economy” might prove to be a far more fruitful paradigm in advancing the state of modern business and marketing theory. As a global economy grows closer, the real U.S. market niche might be providing entertainment-type information for the rest of the world.

In *The Entertainment Economy*, Wolf makes some large claims for the importance of entertainment in the modern world. Is this the creation of a new paradigm for organizing marketing and business thought? He argues that Marshall McLuhan’s dictum “medium is the message” no longer applies to digital entertainment content, in which messages are independent of their medium. With this change, Wolf gives entertainment a lofty status, next to such grand world-changing events as the digital revolution, telecommunications, the steam engine, and merchant banking. Is it truly the beginning of a new revolution, or is it a short-lived sidetrack off a larger mainline trend? Will the “entertainment econ-

my" become little more than the latest business buzzword, with a rise and fall similar to the fate of other buzzwords such as excellence, reengineering, differentiation, and brand equity? That is, a fate similar in many ways to the rise and fall of hit films.

Although Wolf ultimately might be found guilty of overstating the importance of entertainment in the modern United States, the entertainment industry itself may be the culprit in attempting to expand its markets outside traditional entertainment areas. This thought moves beyond mere speculation with the knowledge that the growth curve for the entertainment industry has leveled off. Wolf notes that "In the United States traditional entertainment is a relatively mature business. Consumer spending is flattening. Price increases are wringing out as much additional revenue as they can" (p. 89). In this scenario, Wolf perceives growth as limited to emerging from one of three key areas: (1) a major hit, (2) through global expansion into less mature markets, or (3) through diversification into other industries (p. 89). Is this an attempt by a mature industry to pursue its last option by diversifying into other areas?

In all of this, what place will the marketing profession have? Wolf argues that a new position of "chief entertainment officer" is paralleling the existence of the better known chief information officer. Will entertainment and the creation of the best stories become the key concern of marketers?

Wolf purposefully does not answer these questions. His book is not an academic book, yet there is a sense that he is not revealing his "full hand" and that there are many methods and how-to techniques he is holding close to his chest. However, he has opened a door that may lead to a new way of looking at marketing and business. The marketing profession needs to give his ideas and arguments some thoughtful consideration and then make its own evaluation. Do his ideas lead toward a new paradigm in marketing or to just another trendy popular buzzword in business, here today and gone tomorrow? Will the idea of the entertainment economy be the next big blockbuster idea, or will it fade quickly at the "box office" of business opinion? And ultimately, might its rise to prominence as a business concept be related largely to its entertainment value and the interesting story it tells about the modern business world?

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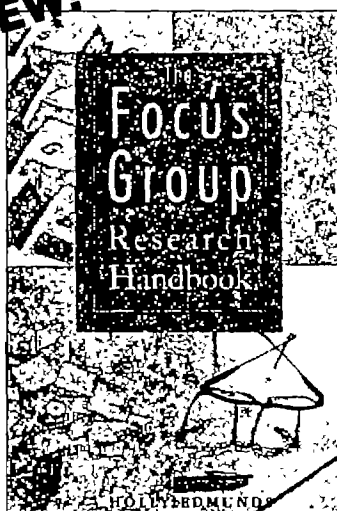
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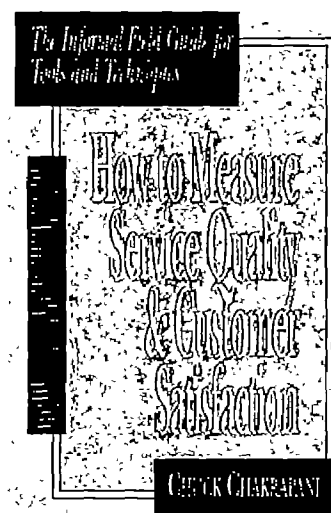


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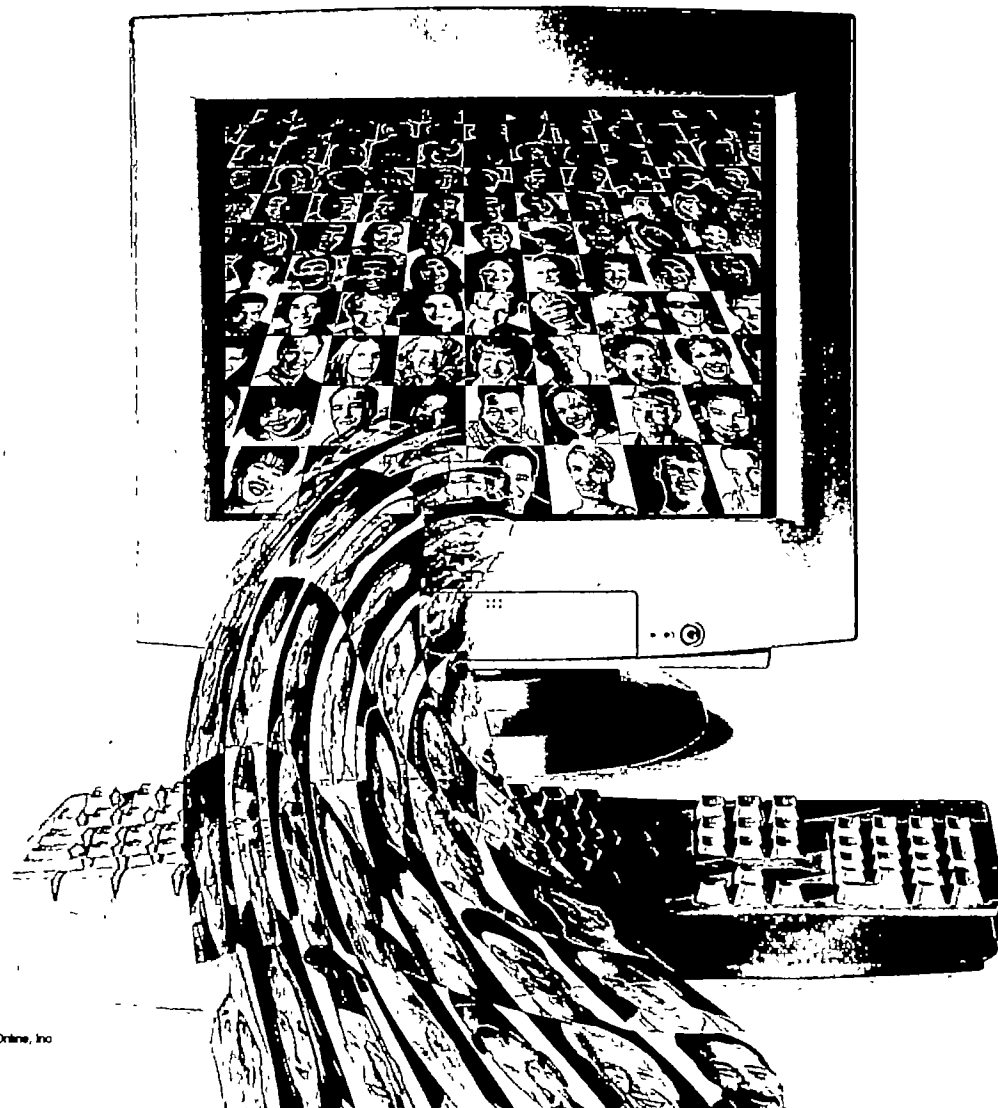
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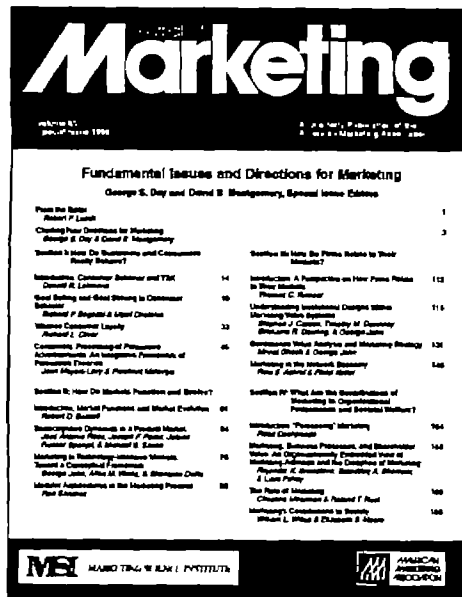
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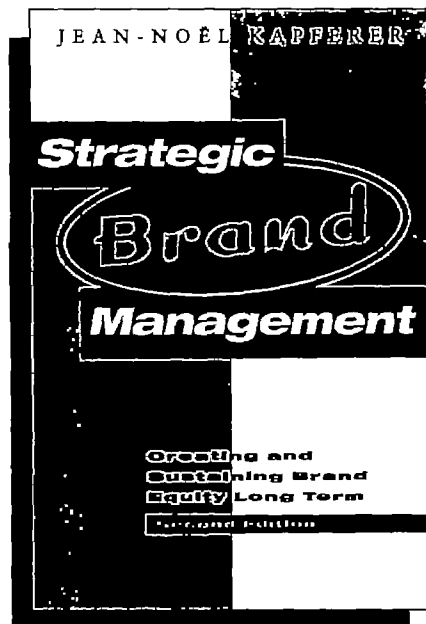
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New Product Quality and Product Development Teams

New product quality has been found to have a major influence on the market success and profitability of a new product. Firms are increasingly using cross-functional teams for product development in hopes of improving product quality, yet researchers know little about how such teams affect quality. The author proposes and tests a series of hypotheses regarding how new product quality is affected by team characteristics (functional diversity and information integration) and contextual influences (time pressure, product innovativeness from the firm's perspective, customers' influence on the product development process, and quality orientation in the firm). The findings reveal that quality is positively related to information integration in the team, customers' influence on the product development process, and quality orientation in the firm. New product quality is negatively influenced by the innovativeness of the new product from the firm's perspective. However, information integration mitigates the negative effect of innovativeness on quality. Quality orientation weakens the relationship between information integration and quality. Time pressure and functional diversity do not have any effect on product quality.

An important determinant of a new product's market success and profitability is its quality, that is, the superiority of the product in dimensions such as appearance, performance, workmanship, and life/durability (Aaker and Jacobson 1994; Buzzell and Gale 1987; Clark and Fujimoto 1991; Garvin 1988; Jacobson and Aaker 1987; Phillips, Chang, and Buzzell 1983). The crucial role of product quality in influencing a firm's competitiveness in the marketplace has come to be widely recognized in the United States in the last two decades, particularly after better-quality Japanese products started capturing a major share of the market in one industry after another (Bounds et al. 1994; Clark and Fujimoto 1991; Garvin 1988). In hopes of enhancing the quality of their products, several U.S. firms have started embracing total quality management principles, which are believed to have helped Japanese companies improve quality (Bounds et al. 1994; Clark and Fujimoto 1991).

A key message of the total quality approach is that an effective way of enhancing new product quality is to use cross-functional product development teams (Garvin 1988; Hackman and Wageman 1995). Consequently, an increasing number of firms are entrusting the product development task to teams composed of individuals from a variety of functional areas, such as marketing, research and development (R&D), manufacturing, and purchasing. Although the virtues of cross-functional product development teams have been widely extolled, few would argue that the mere formation of such teams is sufficient to enhance new product quality meaningfully (Bounds et al. 1994; Wheelwright and Clark 1992). However, despite the critical role of quality in influencing the success of a new product and the growing

popularity of cross-functional product development teams, there has been little research on how these teams affect new product quality (Menon, Jaworski, and Kohli 1997).

Although much has been written about quality in the last two decades, most of it is either descriptive or prescriptive in nature and relies heavily on anecdotes rather than on appropriate research designs (Hackman and Wageman 1995). There exists some recent firm-level research on the determinants of product quality (Clark and Fujimoto 1991; Menon, Jaworski, and Kohli 1997; Morgan and Piercy 1998; Song, Souder, and Dyer 1997). However, these studies have mainly concentrated on the effects of macro- or firm-level variables (such as structural and cultural factors) rather than on the influence of micro- or team-level factors on new product quality. Also, firm-level research has usually focused on aggregate outcomes (e.g., the quality of a firm's products in general) instead of on how the quality of a new product is affected by the team. The knowledge generated by these firm-level studies, though certainly useful, may not be effective in explaining variations in team-level outcomes.

Similarly, there exists some research on product development teams, and it has provided valuable insights on the effects of teams on outcomes such as market performance of the new product, cycle time, and efficiency in developing innovations (Ancona and Caldwell 1992; Barczak and Wilemon 1992; Eisenhardt and Tabrizi 1995; Thamhain 1990). However, such insights may not directly apply to how teams influence a different outcome, such as new product quality. As is discussed subsequently, team-related factors that help one type of product outcome may not necessarily facilitate other outcomes and may even harm them. Therefore, this study explores how various aspects of cross-functional teams enhance or diminish new product quality.

Literature in the areas of quality management, group psychology, and innovation can help in the development of a framework for studying the effect of cross-functional teams on new product quality. On the basis of this literature, it can be suggested that the emergence of a quality outcome

Rajesh Sethi is Assistant Professor of Marketing, School of Business, Clarkson University. The author thanks Larry Compeau, Anju Sethi, Steven Silverman, and the two anonymous *JM* reviewers for their insightful and helpful comments.

can be affected by two sets of factors—the characteristics of the team and contextual influences on the team. Accordingly, I consider variables related to these two sets of factors. Regarding team characteristics, I focus on a critical team process (integration of information of various functional areas) and on the “physical” composition of the team (functional diversity). Regarding contextual influences on the team, I study the effects of time pressure, the innovativeness of the product, customers’ influence on the product development process, and quality orientation in the firm.

Studying the extent to which these team-related factors affect new product quality makes several contributions to both marketing practice and theory. From a practical standpoint, I focus on understanding factors that affect an important underlying explanation for new product success and profitability (i.e., new product quality). Even though this study is somewhat exploratory in nature, because I consider variables that can be influenced by managers, the findings of the study should provide useful recommendations for enhancing new product quality and, in turn, improving success and profitability. There are reasons to expect that some of these variables, which managers usually consider while forming product development teams, may have adverse effects on quality. Therefore, it is particularly useful to see if popular team-formation heuristics enhance or undermine new product quality.

In terms of theory, an important contribution of this study is its extension of the existing research on quality, which so far has focused primarily on organizational-level antecedents, to the team level. Unlike the existing firm-level research on quality that basically draws on concepts from sociology or organization theory, a team-level study must rely more on group research. Here, I develop such a team-level framework. Relatedly, another major contribution of this study is its examination of how some apparently conflicting demands that are placed on product development teams affect a critical outcome such as new product quality. For example, in search of innovative outcomes, product development teams might venture into new areas that are unrelated to their existing operations, which may lead to compromises in the quality of the new product. By focusing on the effects of such seemingly conflicting demands, this study helps clarify possible trade-offs associated with various expectations that managers have about the new product.

New Product Quality

Quality has been defined as perceived superiority or excellence in a product as compared with competing alternatives from the perspective of the marketplace (Garvin 1988; Zeithaml 1988). However, because this a general definition, it is important to understand along what specific dimensions the superiority of a product should be evaluated. Garvin (1988) and Juran and Gryna (1989) have suggested several dimensions of product quality. Four of these dimensions can be useful in developing a definition of product quality that is applicable to both durable and nondurable consumer products. These dimensions are aesthetics, performance,

life, and workmanship.¹ Aesthetics is the extent to which the new product is attractive in appearance. Performance refers to how well the product performs its intended function. Life is the duration for which the product remains usable before it needs to be disposed of. Finally, workmanship refers to how well manufactured the product appears to be. In addition, there is a need to consider one more dimension of quality—that is, safety—which is often overlooked in discussions on quality. An unsafe product cannot be considered a quality product. As such, I define new product quality as the extent to which a new product is superior to competing products in aesthetics, performance, life, workmanship, and safety.

Theory and Hypotheses

Because of the nature of the problem being examined in this study, the conceptual base for the hypotheses is drawn from three streams of literature: quality management, group psychology, and innovation. This literature suggests that the emergence of a quality outcome can be affected by two sets of factors—the characteristics of the team and contextual influences on the team (See Figure 1).

Team Characteristics and New Product Quality

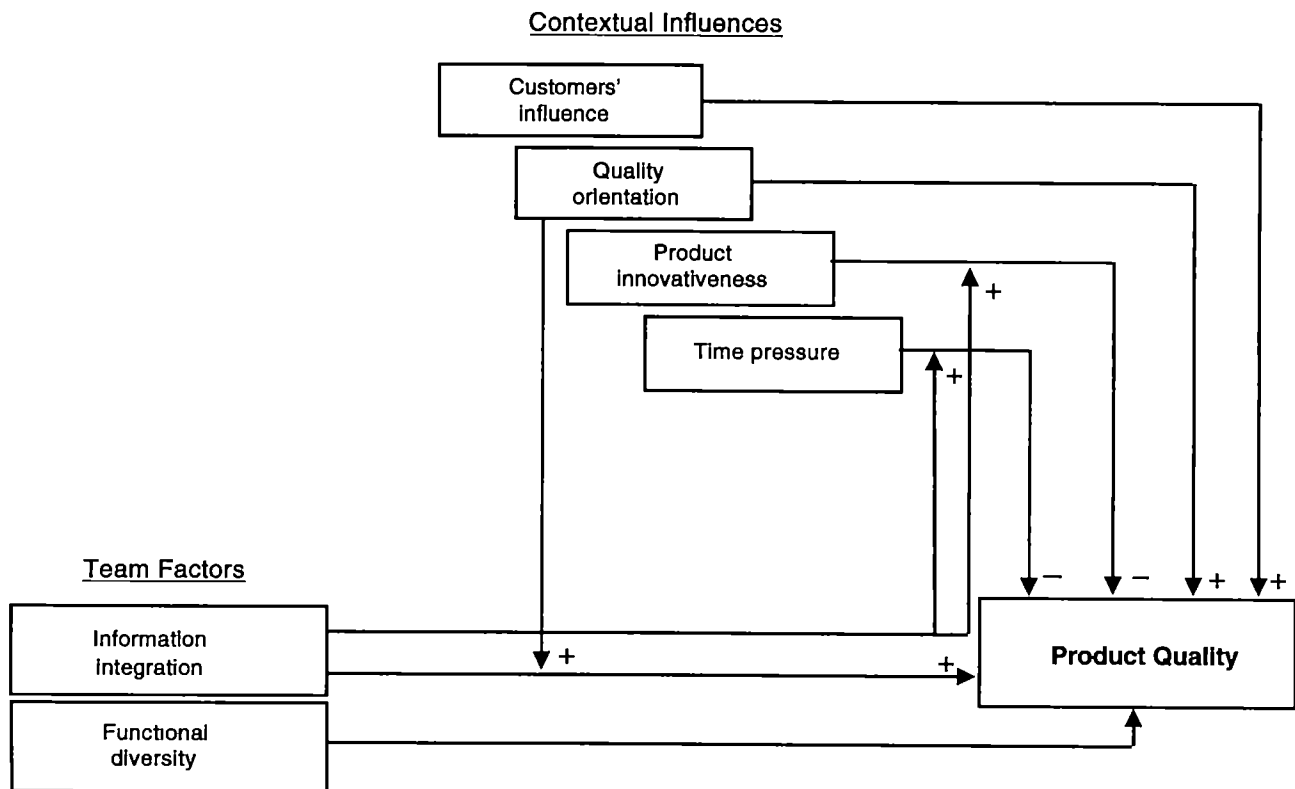
The two important team characteristics I consider are (1) team process and (2) physical composition. Regarding the former, I focus on integration of information across functional areas. Information integration refers to the degree to which members of the team share, pay attention to, and challenge one another’s information and perspectives to generate new insights about the product. This conceptualization of information integration in a team can be viewed as a special case of the general concept of integration, which essentially captures joint working (i.e., interaction and collaboration) between functional areas at the firm level (Griffin and Hauser 1996; Gupta, Raj, and Wilemon 1986; Kahn 1996; Ruekert and Walker 1987). I focus on information integration in particular because the specific processes that are considered conducive to the emergence of high quality are more akin to information integration than mere joint working between functional areas (Clark and Fujimoto 1991; Garvin 1988; Hauser and Clausing 1988).

Regarding physical composition, the variable I focus on is functional diversity within the team. In the quality literature, for the emergence of a superior or high-quality outcome, it is considered crucial to involve several functional areas, which can bring diverse input to the decision-making process (Bounds et al. 1994; Clark and Fujimoto 1991; Garvin 1988).

Effect of information integration. Because members in a team with high information integration share information more effectively, carefully attend to one another’s perspec-

¹The actual dimension suggested by Garvin (1988) is conformance, which refers to whether the product meets specifications during its manufacturing. However, conformance can be evaluated mainly on the production line. From the standpoint of perceived quality, it is more appropriate to replace conformance with perceived workmanship.

FIGURE 1
Team-Level Factors Affecting New Product Quality



tives, and freely question and challenge these perspectives and their underlying assumptions, they are more likely to achieve a common understanding among themselves and consistency across various decisions made by the team. Developing a common understanding about the product and achieving consistency among decisions made throughout the product development process are considered critical for the development of a quality product (Clark and Fujimoto 1991; Garvin 1988; Menon, Jaworski, and Kohli 1997). Because individuals from various functional areas often have different ideas about the product (Dougherty 1992; Garvin 1988), without effective information integration, these individuals generally pull the project in different directions and thereby adversely affect the quality of the new product.

Relatedly, effective information integration is expected to help in bringing functional knowledge and expertise together while important project-related decisions are being made. When diverse knowledge is brought together, it can help the team discover superior ways to satisfy customer needs; for example, R&D can get design ideas from marketing for enhancing product performance and from manufacturing for making the product more reliable (Clark and Fujimoto 1991; Menon, Jaworski, and Kohli 1997). Better satisfaction of customer needs related to aesthetics, performance, life, workmanship, and safety is the essence of high quality.

More important, a good-quality product synergistically builds on a firm's accumulated experience with the existing product technology and manufacturing process (Clark and

Fujimoto 1991). It generally takes a great deal of time and resources to stabilize a product design and achieve a balance between the product technology and the manufacturing process. Such a balance helps reduce variation in production. If the new product causes a major disturbance in the existing balance, it can have an adverse effect on the quality of the product, at least until the balance is restored (Clark and Fujimoto 1991). To be able to maintain this balance and synergistically build on the firm's existing technology and processes, individuals in the team must effectively integrate the information and perspectives of various functional areas. Therefore,

H₁: The level of information integration in a cross-functional product development team is positively related to new product quality.

Effect of functional diversity. Cross-functional diversity refers to the number of functional areas represented on the team whose members are fully involved in the project. As the number of functional areas represented on the team increases, it is expected to ensure the availability of crucial functional input during the process of making important product-related decisions. Availability of various functional input helps in creating consistency among various decisions, generating ideas for satisfying customer needs in a superior manner, and building synergistically on the firm's existing technology and manufacturing process, which in turn facilitates the development of a high-quality product. Beyond a

certain point, however, a diversity of ideas and perspectives can create problems such as increased decision complexity and confusion. To handle such problems, it is not uncommon to find teams resorting to simplifying heuristics, ignoring several alternatives, or avoiding in-depth processing of alternatives (Keller and Staelin 1987; Weick 1995). Inadequate information processing during new product development can have an adverse effect on the quality of the new product (Clark and Fujimoto 1991; Hauser and Clausing 1988; Imai 1986).

In summary, as functional diversity increases from a low to a moderate level, the quality of the new product is expected to increase. However, as functional diversity goes beyond the moderate level, the quality is likely to decline. Therefore,

H₂: New product quality will be highest when functional diversity in a cross-functional team is moderate.

Contextual Influences and New Product Quality

Although the team characteristics discussed previously may be able to influence new product quality positively, by themselves they may not be sufficient to maximize the benefits of teams. The ability of a team to produce a high-quality outcome can be helped or harmed by contextual influences on the team (Bounds et al. 1994). Therefore, in addition to focusing on the effect of these team factors, it is necessary to understand how various contextual influences affect new product quality. The four contextual influences I consider in this study are (1) time pressure, (2) product innovativeness from the perspective of the firm, (3) customers' influence, and (4) quality orientation in the firm.

Effect of time pressure. A minimum level of time pressure is considered useful in spurring individuals to strive for a superior outcome (Karau and Kelly 1992). Beyond a certain point, however, individuals are less likely to search for additional information and are expected to do restricted processing of available information, because time pressure creates a need for cognitive closure (Karau and Kelly 1992). Therefore, high time pressure can make it difficult for team members to develop a common understanding about the product and build synergistically on the firm's existing technology and manufacturing processes. In addition, because of time pressure, team members may be forced to consider a narrow range of decision alternatives and may not be able to think deeply about the various ways to build superiority into the product (Karau and Kelly 1992). As such, the team's ability to develop a quality product may be adversely affected by high time pressure.

The previous discussion suggests a nonlinear relationship between time pressure and product quality. However, interviews at the outset of this study indicated that new product development teams with low levels of time pressure are rare (senior managers increasingly demand shorter cycle times). Therefore, it is expected that time pressure will be beyond the range of positive effects such that,

H₃: Beyond a moderate level, time pressure has a negative effect on new product quality

Effect of product innovativeness. If a new product is novel for a firm, it can hinder the emergence of a quality

outcome. This negative effect of innovativeness can be explained from both an operational point of view and an organizational learning perspective. First, operationally, a very innovative product can require major changes in the existing technology and manufacturing process and thereby disturb the balance among the product, technology, and manufacturing systems (Clark and Fujimoto 1991). As noted previously, such a balance helps the firm improve quality by bringing the variation in production under control. Because team members who work on a novel product are likely to be overwhelmed with a large diversity of unfamiliar issues, they may not have the necessary frame of mind and the time to work in a focused manner on the process of continuous improvement and to attain a fine balance between the new technology and the manufacturing process (Imai 1986). Consequently, high product innovativeness can lead to a higher variation in production or lower product quality.

Second, the negative relationship between innovativeness and product quality can also exist because different types of learning competencies are needed for the development of a very innovative product compared with a high-quality product. For example, highly innovative products require higher-order, or generative, learning (Argyris and Schon 1978; Slater and Narver 1995), also referred to as exploration (Kyriakopoulos and Moorman 1998; March 1991). The higher-order learning takes place when individuals or firms question the basic assumptions or frameworks within which they have been operating and acquire a different way of looking at the world. This type of learning is more akin to reorientation in the deep structure or durable underlying order in beliefs, thoughts, and processes (Gersick 1991). In contrast, incremental efforts that are involved in continuous improvement of the quality of existing products and processes are consistent with lower-order or adaptive learning (Slater and Narver 1995), also referred to as exploitation of old certainties (Kyriakopoulos and Moorman 1998; March 1991). Lower-order learning occurs when individuals or firms operate within a set of recognized and unrecognized constraints and incrementally learn to improve their performance according to changing circumstances (Argyris and Schon 1978; Slater and Narver 1995) without making any changes in the deep structure (Gersick 1991).

Not only do these two types of learning require different frames of mind, but there is also generally a great deal of inertia that hinders individuals or firms from moving from one state to another (Argyris and Schon 1978; Gersick 1991). Therefore, it is difficult for individuals who are more focused on the generative learning mode to carry out (or quickly switch to) adaptive learning simultaneously, and vice versa. In other words, individuals who are driven to develop highly innovative products might not be able to stick to the regimen required for incremental or continuous improvements in quality. Therefore,

H₄: The innovativeness of a new product is negatively related to product quality.

Effect of customers' influence on the product development process. As used in this study, customers' influence

refers to the extent to which input from customers is used for making important decisions during the initial stages of product development, during which the foundation for product quality is usually laid. For the development of a superior product, it is important to expose members of the product development team to customer needs and the consumption context (Bounds et al. 1994; Clark and Fujimoto 1991; Hauser and Clausing 1988). Moreover, it is useful to seek customer feedback about the team's ideas and plans (e.g., the product concept). This feedback serves as a reality check and ensures that the superiority the team has incorporated into the product is considered meaningful by customers.

However, certain experts doubt whether information from customers can be of much help, because customers can define their requirements mainly in terms of existing products and services that may be low in quality (Deming 1993; Hayes and Abernathy 1980). Accordingly, these experts believe that firms that rely heavily on what customers say they require may risk achieving quality standards far below what their engineers and managers are capable of attaining (Hackman and Wageman 1995). Certainly, such a situation can arise if firms passively accept and develop just what customers say they want in the new product. However, firms deal with customer involvement in the product development process in several different ways. For example, in some situations, firms might proactively apply their own knowledge and expertise about the product and usage situation to help customers discover and articulate their requirements, particularly when customers seem unable to identify meaningful requirements on their own. Sometimes firms ask their lead or expert customers to suggest modifications that can enhance the quality of the product (von Hippel 1988). The insights so obtained (or the new product concept and the design that emerge from these insights) are then evaluated for quality by a wide variety of customers. In other words, even if customers are unable to provide meaningful insights on their own, firms have several ways of obtaining useful input and feedback for improving new product quality. As such,

H₅: The extent of customers' influence on the product development process is positively related to new product quality.

Effect of quality orientation. I define *quality orientation* as the extent to which a firm lays emphasis on quality, creates a commitment to quality among its employees, and practices total quality management. A strong quality orientation in the firm should generally spur the members of a product development team to strive for higher quality outcomes (Bounds et al. 1994; Garvin 1988). Conversely, without a commitment to quality on the part of various functional areas in the firm, a team may not be able to develop a quality product. The resources and facilities of functional areas that lack a commitment to quality are also expected to be relatively low in quality. Because to a large extent teams are dependent on these functional resources and facilities to accomplish their tasks, a lack of quality culture among these functional areas may hinder teams' ability to translate their ideas for improving quality into high-quality products.

Moreover, individuals in a firm with a strong quality orientation are likely to be more attuned to pursuing the path of

continuous improvement to achieve higher quality (Bounds et al. 1994; Imai 1986). These individuals are expected to be particularly aware that a new product needs to be built on the firm's existing technology and manufacturing processes or else there may be high variation, and quality may turn out to be low. Thus, team members who operate in a highly quality-oriented firm are more likely to build synergistically on the firm's technology and manufacturing processes. Therefore,

H₆: The extent of quality orientation in a firm is positively related to the quality of the new product developed by a team.

Information Integration as a Moderator of the Relationship Between Contextual Influences and Quality

As discussed previously, both product innovativeness from the firm's perspective and time pressure are expected to affect adversely the team's ability to build the new product synergistically on the firm's existing technology and manufacturing processes. Considering that firms are constantly advised to develop innovative products and teams are increasingly coming under pressure to shorten the product cycle time, product quality is expected to be compromised under such circumstances. Therefore, it is important to investigate what factors can minimize the adverse effect of product innovativeness and time pressure on quality. In this study, I examine one such factor: information integration in the team.

Moderating the effect of time pressure. As information integration in a team increases, its members are in a better position to reduce the adverse effect of high time pressure on quality. Because members of a high-information integration team communicate effectively, they can find time for essential activities, even under conditions of high time pressure, by setting task priorities, doing parallel work on different aspects of the project, and avoiding unnecessary backtracking of the development job between functional areas because of the common understanding they develop about the project (Clark and Fujimoto 1991; Smith and Reinertsen 1991; Takeuchi and Nonaka 1986). The time thus saved by a team with high information integration can be used to study carefully the input of various functional areas, search for superior ways to satisfy customer needs, and keep variation in the production of the new product to a minimum. In contrast, teams with low information integration may not be able to work effectively in a parallel mode and avoid backtracking of the development job. Therefore, teams with low information integration may not be able to reduce the negative effect of high time pressure on quality effectively. Therefore,

H₇: The negative effect of time pressure on new product quality will be reduced as information integration in the team increases.

Moderating the effect of product innovativeness. High information integration in a team is likely to reduce the adverse effect of product innovativeness on quality. A team in which members work in a highly integrated manner might

be able to minimize the disturbance in the operational balance among the product, technology, and manufacturing processes that an innovative new product creates (Clark and Fujimoto 1991). Members in such a team are likely to be in a better position to handle a large diversity of unfamiliar issues to which a highly innovative product can give rise. Thus, when dealing with the operational imbalance created by the innovative product, members in a team with high information integration may still be able to help control variation in production. In contrast, teams with low information integration may not be able to work effectively to minimize the disturbance between the technology and manufacturing processes that an innovative new product causes. Therefore, teams with low information integration may find it difficult to reduce the negative effect of high innovativeness on quality effectively.

As discussed previously, from a learning perspective, two different types of competencies are needed for the development of a very innovative versus a high-quality product, and it is difficult for firms to develop simultaneously high levels of both types of competencies. Although a team with high information integration may be able to overcome the operational imbalance created by an innovative product, if the firm's basic competence lies in developing innovative new products rather than in continuously improving quality, even an integrated team may not be able to compensate for the firm's lack of competence in producing quality products. Yet considering that integrated teams can effectively take care of the operational imbalance, information integration may, to some extent, offset the negative effect of innovativeness on quality.

H₈: The negative effect of product innovativeness on product quality will be reduced as information integration in the team increases.

Contextual Influences as Moderators of the Information Integration–Quality Relationship

Among popular managerial publications, integration of information across functional areas is considered important for the successful operation of a team. Given the importance managers place on information integration and its expected positive effect on new product quality, it is useful to examine conditions that may elevate the information integration–quality relationship. Here I consider one such factor: quality orientation.

Moderating effect of quality orientation. Although a team with high information integration has the potential to develop a quality product, this potential can be better realized only if other individuals in the organization are driven to develop quality products and have resources and facilities suitable for producing quality outcomes (because teams are greatly dependent on the resources and facilities of many others in the organization). As quality orientation in a firm increases, teams with high information integration are expected to produce a higher-quality product. A team with high information integration is likely to have a better and clearer understanding and plan for the development of a quality product and thus is in a better position to avail of other employees' commitment to quality and the superior

facilities that a firm with high-quality orientation generally has. In contrast, the benefit of increase in firmwide quality may not be as effectively availed of by a team with low information integration, because its members may not have such a clear, common understanding among themselves about developing a quality product. Thus,

H₉: The positive effect of information integration on new product quality will be enhanced as quality orientation in the firm increases.

Covariates. Two covariates are included in this study. First, interdepartmental connectedness in a firm (i.e., the extent of communication and contact across functional areas) has been considered a covariate because it can enhance the availability of diverse functional perspectives and facilitate responsiveness to customers and thereby positively influence new product quality (Menon, Jaworski, and Kohli 1997). Second, the consumer durable goods industry in the United States was an early adopter of the total quality approach, as it was one of the first industries to be hit hard by competition from Japanese goods in the 1970s and 1980s. Considering that this early adoption of the total quality approach by the consumer durable goods industry compared with the consumer nondurable goods industry might have had a positive effect on the quality of durable goods, the type of industry is also a covariate of interest in this study.

Methodology

Data Collection

The hypotheses were tested using data collected through a mail survey from key informants in cross-functional teams involved in recent major new product initiatives. To identify candidate projects and related key informants, a list of consumer product manufacturing firms that had introduced new products within two years preceding the start of this survey was created.

Following similar key informant research (e.g., Cini, Moreland, and Levine 1993), the goal was to identify the person on each team who would be highly knowledgeable about team events and practices. In the present study, this person was the project manager who primarily manages or coordinates a cross-functional product development effort. Project managers can belong to various functional areas, but I decided to focus only on those projects that had project managers from the marketing area, because in consumer product companies (the focus of our study) many new product development projects are coordinated by marketing managers. Also, I discovered during the pretest that it was difficult to identify project managers from nonmarketing functional areas (e.g., because of the highly sensitive nature of R&D projects, many firms were reluctant to provide access to key contacts in that area).

The short-listed firms were contacted by telephone to identify managers from the marketing area who had coordinated new product development projects. These individuals then were screened to confirm that they had recently managed new product development initiatives and that such initiatives used a cross-functional team. Project managers who

TABLE 1
Descriptive Statistics, Reliabilities, and Intercorrelations Among Refined Measures

Measures	Mean	Standard Deviation	Alpha	Simple Correlations						
				1	2	3	4	5	6	7
1. New product quality	5.80	.83	.78	1.00						
2. Information integration	5.15	1.21	.88	.31**	1.00					
3. Customers' influence	4.86	1.56	.91	.16	.14	1.00				
4. Time pressure	5.06	1.24	.77	-.05	-.05	.00	1.00			
5. Innovativeness	2.34	1.07	—	-.25*	-.11	.11	.05	1.00		
6. Quality orientation	5.45	1.31	.87	.42**	.15	.08	-.04	-.04	1.00	
7. Functional diversity	5.69	1.86	—	.02	.02	.15	.06	.00	.05	1.00

*Significant at $p < .01$.

**Significant at $p < .001$.

met these criteria were asked to complete questionnaires that were mailed to them immediately after the screening.

In completing the questionnaire, respondents were asked to focus on their most recently completed new product development project. I expected that project managers would have a better memory of projects in which they were most recently involved. Also, by asking them to focus on the most recent projects, I wanted to minimize the social desirability bias in the selection of projects; that is, many respondents might otherwise choose to focus on their more successful projects.² Questionnaires were sent to 240 project managers. A reminder with another copy of the questionnaire was sent to managers who had not responded after three weeks. I received 141 usable responses, which yielded a 58.75% response rate. The industries represented in the sample consisted of appliances, lawn care equipment, office supplies, toys, processed food products, health and beauty aids, and household products. On an average these projects had been completed 7.8 months before data collection.

To assess the degree of nonresponse bias, responses were divided into two categories—the responses received before reminders and those received after reminders. To examine the possible difference between groups, *t*-tests were conducted with mean responses to each of the variables included in the model. These calculations were made under the assumption that those who responded late were similar to nonrespondents (Armstrong and Overton 1977). There were no significant differences between groups. Therefore, it was inferred that project managers who responded were not very different from those who did not respond.

²There was a concern that even though project managers were asked to focus on their most recent projects, many of them might instead have chosen to report about their very successful projects. To address this concern, I examined the distribution of market performance of these projects (which was measured using a three-item, seven-point scale that asked project managers to rate the performance of the new product compared with their planned objectives in terms of sales, market share, and profitability). The distribution has a good deal of variability (standard deviation = 1.34, mean = 4.67 on a seven-point scale). Of all the projects that were launched, 23% performed below expectation (or were disappointments), and 15% performed just at the firm's planned objectives for the new product. Thus, there is no concern that a majority of managers chose to report about their very successful projects.

Measures

Whenever possible, existing measures of the constructs were used. All measures were pretested on 30 managers who completed them for the cross-functional teams in which they had participated. On the basis of the pretest, measures were refined. All constructs were further tested with 7 managers of product development projects who completed the measures for cross-functional product development teams in which they had participated and who also commented on their understanding of the items. Detailed interviews were held with these managers and, on the basis of their feedback, the questionnaire was further revised and administered to the full sample (for scales, see the Appendix).

After data collection, each measure was examined for low item-to-total correlations (Churchill 1979). No scale item was deleted at this stage. Descriptive statistics and reliability for each measure are included in Table 1. Exploratory factor analysis indicates that all the major variables in the study were unidimensional scales.

New product quality was measured as the extent to which a new product is perceived to be superior to other competing products in aesthetics, performance, life, workmanship, and safety. This measure is based on the work of Garvin (1988) and Juran and Gryna (1989). The quality scale is a new five-item, seven-point semantic differential scale that taps the previous dimensions of quality.

The use of project managers as a source of data on new product quality gives rise to a possible concern that the judgment of the responding managers about new product quality may not reflect that of consumers. To examine the extent to which the ratings of product quality by the managers and customers agree with each other, additional data were obtained from consumers (see Andrews and Smith 1996). Specifically, some of the respondents revealed the brand names of their products. From these, I focused on 23 products that could be evaluated by customers for quality because they were commonly available products.

For each of these 23 products, a product concept sheet was prepared that included a picture and a brief written description of the product. After reading a product concept sheet, consumers responded to the quality of the product on the same scale used by managers. Consumer respondents were screened to ensure that only those who had used the product were asked to evaluate the product. A total of 316

responses was collected from 190 respondents. To determine the extent to which consumers' assessments agreed with those of project managers, I examined the correlation between the average of consumers' ratings for a particular product and the corresponding manager's rating ($n = 23$). The correlation ($r = .73, p < .01$) suggests a high match between the two groups and supports the use of managers' ratings of new product quality.

Information integration was operationalized as the degree to which members of a cross-functional team share, pay attention to, and challenge one another's information and perspectives to discover new ideas about the product. This measure is based on the conceptualization of integration suggested by Gupta, Raj, and Wilemon (1986) and the measure of market information use suggested by Deshpandé and Zaltman (1982). The information integration scale is a four-item, seven-point Likert-type scale.

Functional diversity was operationalized as the number of functional areas represented on the team whose members were fully involved in the project (rather than being ad hoc specialists or consultants who were engaged only for a limited time). The average number of functional areas represented in the product development teams studied was six per team, which suggests that teams had considerable diversity.

Time pressure refers to the extent to which team members believed that they experienced shortage of time during the development of the product in question. A new three-item, seven-point Likert-type scale was developed to measure time pressure.

Product innovativeness was measured as how novel the product was for the firm. The product newness scale was a four-item scale derived from Booz, Allen & Hamilton's (1982) taxonomy of new products. A score of one on this scale means that innovativeness is low and the new product is an improvement or modification of an existing product of the firm, and a score of four indicates that innovativeness is high and the product is novel for the firm and the industry.

Customers' influence on the development process was operationalized as the extent to which input and feedback from end customers was relied on in the development of the product concept and design. The reliance on customer input scale is a new three-item, seven-point Likert-type scale.

Quality orientation was measured as the extent to which a firm emphasizes quality, creates a commitment to quality among its employees, and practices total quality management. The quality orientation scale is a new three-item, seven-point Likert-type scale.

Covariates. The first covariate, interdepartmental connectedness, was operationalized as the extent of formal and informal communication and contact among employees across functional areas in a firm (Jaworski and Kohli 1993). The scale for this variable is a four-item, seven-point Likert-type scale (Jaworski and Kohli 1993). The second covariate, the type of industry, refers to whether the new product was a consumer durable or nondurable.

Results

Hypothesis Testing

Hypotheses were tested using moderated regression analysis as suggested by Aiken and West (1991) and Jaccard, Wan, and Turrissi (1990). Significant interactions in the model were examined through the simple slope analysis, a technique that overcomes the need to create subgroups from continuous independent variables (Aiken and West 1991).³ An examination of correlations among independent variables showed that correlations ranged from 0 to .15 (see Table 1). To minimize multicollinearity among interaction terms and their constituent terms in the regression model, all independent variables were mean centered (Aiken and West 1991; Jaccard, Wan, and Turrissi 1990). To test for multicollinearity, the eigenvalue spectrum multicollinearity diagnostic (Myers 1986) was used. For this purpose, the condition number, that is, the ratio between the highest and the lowest eigenvalues in the model, was calculated. In the model, this ratio was 12.4. As Myers (1986) suggests, researchers should be concerned about multicollinearity if the condition number is greater than 1000.

As can be seen in Table 2, the terms in the model accounted for 35% of the variance in new product quality, and the F statistic was 7.46 ($p < .001$). The F-test for difference in R-squares between the models with interaction terms and without interaction terms (Jaccard, Wan, and Turrissi 1990) is significant ($F = 5.38, p < .01$), which suggests the existence of interaction effects. Results of the simple slope analysis appear in Table 3.

Main Effects of Team and Contextual Influences on New Product Quality

As was expected, information integration was positively related to new product quality ($b = .15, t = 2.38, p < .01$). H_1 is supported. To examine further if information integration influences some dimensions of quality more than others, these dimensions were correlated with information integration. The analysis suggested that except for life ($r = .14, p = .12$), the other four dimensions (i.e., aesthetics, performance, safety, and workmanship) were significantly correlated with information integration ($r_{\text{aesthetics-integration}} = .23, r_{\text{performance-integration}} = .33, r_{\text{safety-integration}} = .23, r_{\text{workmanship-integration}} = .31, p < .01$). Considering that the three important product development stages, namely, concept development, design, and manufacturing preparation, have some type of role in influencing at least a few of these four

³The simple slope analysis technique involves rearranging a regression of the dependent variable at various levels of a moderator variable. For example, to examine the interaction $Y = \alpha + \beta_{\text{ind}}X_{\text{ind}} + \beta_{\text{mod}}X_{\text{mod}} + \beta_{\text{inter}}X_{\text{ind}}X_{\text{mod}}$ (ind = independent term, mod = moderator term, inter = interaction term), the equation is rearranged as $Y = \alpha + X_{\text{ind}}(\beta_{\text{ind}} + \beta_{\text{inter}}X_{\text{mod}}) + (\beta_{\text{mod}}X_{\text{mod}})$. After substituting the values of relevant unstandardized regression coefficients from the full regression model, the equation is solved for X_{ind} at different values of X_{mod} such as $(\bar{x} + 1s)$, $(\bar{x})$, $(\bar{x} - 1s)$ (Aiken and West 1991; Jaccard, Wan, and Turrissi 1990). This yields a series of equations reflecting the effect of the independent variable under different levels of the moderator variable.

TABLE 2
Unstandardized Regression Coefficients

	b	Standard Error b	t
Main Effects on New Product Quality			
H ₁ Information integration	.15	(.06)	2.38**
H ₂ Functional diversity	.02	(.15)	.12
Functional diversity (quadratic term)	-.01	(.07)	-.18
H ₃ Time pressure	-.01	(.07)	-.09
H ₄ Innovativeness from the firm's perspective	-.48	(.26)	-1.85*
H ₅ Customers' influence	.18	(.06)	2.89**
H ₆ Quality orientation	.25	(.07)	3.63***
Interaction Effects			
<i>Moderating Effects of Information Integration on the Effects of Time Pressure and Innovativeness</i>			
H ₇ Information integration × time pressure	.01	(.01)	.76
H ₈ Information integration × innovativeness	.15	(.06)	2.70**
<i>Moderating Effects of Quality Orientation on the Effect of Information Integration</i>			
H ₉ Quality orientation × information integration	-.04	(.02)	-2.76**
Covariates			
Interdepartmental connectedness	.09	(.07)	1.29
Industry	2.10	(.59)	3.51***
R-square = .41			
Adjusted R-square = .35			
F = 7.46***			

*Significant at $p < .05$.

**Significant at $p < .01$.

***Significant at $p < .001$.

TABLE 3
Results of Simple Slope Analysis for Significant Interactions

Interaction	Slope for Various Levels of the Moderator Variable ^a		
	Low	Moderate	High
Innovativeness × information integration ^b	-.66	-.48	-.30
Information integration × quality orientation ^b	.20	.15	.10

^aSlope of the equation capturing the relationship between independent and dependent variables for various levels of the moderator variable

^bModerator variable.

dimensions of quality, it seems that information integration is indeed critical almost throughout the product development process.

The results did not support the nonlinear relationship between functional diversity and quality proposed in H₂. Coefficients for both the linear term ($\beta = .02$, $t = .12$, $p = .46$) and the quadratic term ($\beta = -.01$, $t = -.18$, $p = .43$) of functional diversity were not significant. Time pressure was predicted to have a negative effect on quality, but contrary to expectations, time pressure was not related to quality ($b = -.01$, $t = -.09$, $p = .47$). H₃ is not supported. However, innovativeness from the firm's perspective was negatively related to product quality as was suggested in H₄ ($b = -.48$, $t = -1.85$, $p < .05$).

Consistent with expectations, customers' influence on the product development process was positively related to

new product quality ($b = .18$, $t = 2.89$, $p < .01$); thus H₅ is supported. To explore further if customers' influence on new product quality differed during the idea/concept development stage and design stage, I combined the first two items of the scale that relate to idea generation and concept development/testing and left the third item about customers' influence during the design stage as it was. I then correlated product quality with customers' influence during the idea/concept development stage and the design stage. Customers' influence during the idea/concept development stage seems to have a stronger relationship to product quality ($r = .18$, $p < .05$) than does customers' influence during the product design stage ($r = .08$, $p = .38$).

Furthermore, it was hypothesized that quality orientation would have a positive effect on quality (H₆). This prediction is also supported ($b = .25$, $t = 3.63$, $p < .001$).

Interaction Between Team Factors and Contextual Influences

It was predicted that information integration would mitigate the negative effect of time pressure on new product quality (H_7). The interaction between time pressure and information integration was not significant ($b = .01$, $t = .76$, $p = .23$). H_7 is not supported.

Similarly, according to H_8 , information integration was expected to reduce the negative effect of product innovativeness on quality. The interaction between product innovativeness and information integration was significant ($b = .15$, $t = 2.70$, $p < .01$). Simple slope analysis (Aiken and West 1991) suggests that as information integration increases from low to high, the slopes of equations capturing the negative effect of product innovativeness on quality progressively decrease (Table 3). Therefore, H_8 is supported.

Quality orientation was expected to strengthen the effect of information integration on new product quality (H_9). The interaction between quality orientation and information integration was significant, but the sign of the coefficient was negative ($b = -.04$, $t = -2.76$, $p < .01$). As is indicated by simple slope analysis, when quality orientation increases from low to high, the slopes of equations capturing the positive effect of information integration on quality become progressively less positive (Table 3). H_9 is not supported. This finding is treated in more detail in the discussion section.

Covariates

The covariate interdepartmental connectedness was found to have a weak positive effect on new product quality ($b = .09$, $t = 1.29$, $p < .10$). The dummy variable for durable products also had a significant effect on quality ($b = 2.10$, $t = 3.51$, $p < .001$), which confirms the contention that the early adoption of the total quality approach by the durable goods industry has a positive effect on the quality of new durable goods.

Conclusions and Discussion

This research examines how certain team characteristics and contextual influences affect new product quality. The results show that quality is positively influenced by information integration in the team, customers' influence on the product development process, and quality orientation in the firm. However, product innovativeness has a negative effect on quality. Functional diversity and time pressure have no effect on new product quality. The relationship between information integration and new product quality is weakened by quality orientation in the firm. Information integration mitigates the negative effect of product innovativeness on quality.

Some hypotheses were not confirmed. First, there was no effect of time pressure on quality. The absence of the main effect of time pressure seems to confirm the belief by certain experts in the product development area that teams have the ability to perform well even under conditions of limited time (Smith and Reinertsen 1991; Takeuchi and Nonaka 1986). Possibly, as Eisenhardt and Tabrizi (1995) suggest, because the steps required for cycle time reduction are quite predictable in stable industries, such as consumer

durable and nondurable goods, teams are able to deal easily with time pressure through various well-known strategies, including supplier involvement and simultaneous product development with overlapping stages. Considering that products in the sample were from stable industries (and thus were not radical new products), it is possible that product development teams were able to overcome the adverse effect of time pressure. Relatedly, it seems that because there was no negative main effect of time pressure on quality that could be mitigated, no moderating effect of information integration on the time pressure–quality relationship could be detected. Further research should examine whether the negative effect of time pressure on quality is more likely to be found in less stable industries (such as high-tech industries) and whether integration plays any role in mitigating the negative effect of time pressure in such industries. It will also be interesting to examine whether different sources of time pressure have differential effects on quality. (For example, time pressure created by some arbitrary deadlines imposed on the project may have a different effect than time pressure experienced by a team when it is in a race to reach the market earlier than a competitor.)

Second, an unexpected result in this study is the negative moderating effect of quality orientation on the relationship between information integration and new product quality. I hypothesized a positive moderating effect, expecting that quality orientation will help a team with high information integration more than a team with low information integration. However, as the findings suggest, the reverse seems to be true. Possibly, because employees in firms with high-quality orientation are more committed to developing quality products and the facilities of the firm are generally of better quality, even a low information integration team is able to develop a high-quality product in such an environment. Conversely, considering that high information integration by itself is quite effective in enabling the team to build the new product synergistically and find new ways to enhance superiority, high firmwide quality orientation in such a situation may not lead to any substantial increase in new product quality. In other words, in a firm with high-quality orientation, the relationship between information integration and new product quality may not be as strong, or information integration plays a less significant role in influencing new product quality.⁴ More research is needed to understand fully the process through which quality orientation in the firm affects the ability of teams to influence new product quality.

Finally, no relationship was found between functional diversity and new product quality. However, at the same time, information integration among members from different functional areas has a strong effect on quality. One interpretation of these findings could be that merely having a functionally diverse team is not sufficient for the emergence

⁴Alternatively, it can be suggested that in firms with strong quality orientation, the extent of information exchange or integration between functional areas at the firm level is expected to be high as a matter of course. Thus, individuals in high-information integration teams in such firms are likely to be faced with extremely large amounts of information that can create information overload. This overload can lead to inefficient decision making and harm the quality of the new product

of quality. Instead, product quality seems to depend on how effectively members from different functional areas integrate information and perspectives. Alternatively, perhaps no effect of functional diversity on quality was found because there seems to be a critical threshold beyond which increased functional diversity does not contribute to quality, and with the average number of functional areas at six, the teams in the sample may have been beyond this threshold. Further research may be able to identify teams with a wider range of functional diversity to understand how this variable affects quality.

Limitations of the Study

There are three primary limitations to this study. First, the dependent and several independent measures in the study are perceptual in nature, which could have led to common method bias. It is encouraging, however, to note a high degree of agreement between the project managers' ratings of quality and an outside assessment of quality by consumers. This suggests that common method bias should not be a serious cause for concern. Future studies, however, might consider more objective quality ratings of new products from an independent source, such as *Consumer Reports*. Because such quality ratings are not available for all new products, researchers might want first to select products for which quality ratings have already been published and then work backward to find the project teams that developed these products.

Second, this study deals with relatively stable and mature consumer products for which the product development process is fairly predictable and consists of well-understood steps. Such products require a deliberate development process that emphasizes extensive planning. Conversely, for products in an uncertain industry, experiential tactics involving frequent iterations of design are more appropriate (Eisenhardt and Tabrizi 1995). For these reasons, the findings of this research may not be generalizable to firms that operate in more uncertain environments.

Third, it is possible that projects that are coordinated by marketing managers (as was the case with projects in this study) rather than by managers from R&D or manufacturing may involve less technical complexity and relatively less collaboration among technical areas such as R&D and manufacturing. Therefore, some caution must be exercised in applying the findings of this study to technically complex projects that involve intense collaboration among technical areas.

Managerial Implications

Although this study is exploratory in nature, it still provides some guidelines to managers for improving product quality. For example, the findings alert managers to the trade-off between product innovativeness and quality. As was noted previously, the problem can arise because of the operational imbalance between the technology and manufacturing processes created by a novel product or because of differences in competencies required for developing a highly novel product compared with a high-quality product. Although the results indicate that the problem of operational imbalance can be offset, to some extent, by the use of teams with high information integration, as noted previously, it

would generally be difficult for firms to have both types of competencies or pursue high innovativeness and quality simultaneously. One possible solution is to create a separate division for working on innovative new products and let the existing divisions focus more on quality improvements.

Considering the potential conflict between focusing on continuous improvement in quality and seeking novel products, it is crucial to understand which is more important for organizational performance. The first important factor that needs to be taken into account in this regard is the strategic posture of the firm. For example, whereas prospector firms might focus more appropriately on developing more innovative products, defender firms may be better off putting more emphasis on quality improvements. However, if a prospector firm starts focusing too much on continuous improvement in quality, though it might be able to strengthen competencies that promote efficient continuous improvement, it can end up neglecting and weakening competencies that generate innovative products (see Kyriakopoulos and Moorman 1998; March 1991). Thus, a prospector firm that places excessive emphasis on quality improvement runs the risk of being left behind in the long run by competitors that continue to emphasize innovation.

The second factor that can influence whether to emphasize innovativeness or quality is the life cycle stage of the product category. If the new product is in the initial stages of its life cycle, focusing more on innovative outcomes might be important, but as the product category starts to mature, it may be more appropriate to emphasize quality improvement. Finally, the technical sophistication of the product category can also affect whether to focus on innovativeness or quality. In high-tech areas, in which technology is rapidly evolving, firms might want to focus more on innovativeness rather than overemphasize continuous improvement in quality.

Furthermore, although it has been suggested that seeking information from customers can only be of limited use because customers can define their requirements mainly in terms of existing products and services that may be low in quality (Deming 1993; Hayes and Abernathy 1980), this research suggests that teams that seek more input from customers during the initial phases of the product development process end up developing better-quality products. Results indicate that customer input during the idea/concept development stage is more effective in enhancing quality than in a subsequent stage, such as product design. Considering the evidence from previous research that many product development teams tend to cut short the process of obtaining information from customers—particularly during the initial stages of product development (Cooper 1993)—it is important to impress on teams that they need to stay in touch with customers during new product development.

Finally, although the drive toward shorter cycle time in the business world is believed to have negative consequences for new products (Crawford 1992), the results suggest otherwise. It appears that product development teams have the ability to handle time pressure effectively, at least in industries with a stable environment in which the product development process is quite predictable (as was the case with this sample).

Implications for Theory and Research

This study extends research on new product quality, which has so far mainly focused on organizational antecedents and broad aggregate outcomes (e.g., the quality of a firm's new products in general), to the team-level determinants of new product quality. It has also examined two apparent trade-offs involved in new product development, namely, the trade-offs between quality and innovativeness and between quality and time pressure. In the new product development area, research has usually been done under the belief that it is possible to achieve high quality, high innovativeness, and shorter cycle time simultaneously (some exceptions are studies by Crawford [1992] and Griffin [1997]). More research is needed on such trade-offs. Particularly, it will be interesting to explore how certain team, senior management, or firm factors can help resolve these trade-offs. For example, as this research has suggested, information integration in the team can somewhat mitigate the adverse effect of innovativeness on quality.

Similarly, researchers rarely have questioned the popular notion that autonomous cross-functional teams are always good for product development and have assumed that there are no downsides or costs of the use of cross-functional teams for a firm as well as for individuals who are involved in these teams (an exception is a study by Olson, Walker, and Ruekert [1995]). For example, firms need to create special evaluation, monitoring, and reward systems for such teams. Functional chiefs can feel threatened by the loss of power and control over such autonomous projects. Similarly, team members can be separated from their functional areas for a long time and may face adjustment problems when they try to rejoin their respective areas after the completion of projects. Therefore, more research is needed on how firms can improve new product outcomes such as quality and still minimize the costs associated with autonomous teams. For example, as the results of this study suggest, in a firm with high-quality orientation, information integration plays a less significant role in influencing quality.

Furthermore, whereas this study covers the entire product development process, it would be informative to examine the effects of different aspects of cross-functional teams at various stages of the new product development process. For example, a certain type of team composition may be more effective at some product development stages than at others. If a team has more representatives from marketing and design than manufacturing, it might be more effective in building superiority into the product at the concept development and design stages than during manufacturing preparation. However, to make such stagewise analysis more meaningful, researchers may have to find a way of measuring superiority or quality built into the product at different stages of the product development process (e.g., concept quality, design quality, manufacturing quality).

Finally, although I have relied on the organizational learning literature to examine the trade-off between quality and innovativeness, the effect of factors related to organizational knowledge on new product quality can be studied in further research. For example, a team's absorptive capacity (Cohen and Levinthal 1991), which refers to its ability to

recognize and assimilate external knowledge, can affect whether the team will be able to recognize customer needs and identify the appropriate technology for satisfying these needs effectively. Similarly, the richness and accessibility of organizational memory (Moorman and Miner 1997; Walsh and Ungston 1991) can also influence the degree to which a team can synergistically build the new product on the firm's existing store of expertise.

APPENDIX Measures

A. Quality^a

Unattractive	1	2	3	4	5	6	7	Attractive
Works poorly	1	2	3	4	5	6	7	Works well
Has short life	1	2	3	4	5	6	7	Has long life
Unsafe	1	2	3	4	5	6	7	Safe
Badly manufactured	1	2	3	4	5	6	7	Well manufactured

B. Information Integration^b

- Members freely shared their information and perspectives with one another.
- When making important project-related decisions, members paid great attention to the information and perspectives of members from other departments.
- Members freely challenged the assumptions underlying one another's ideas and perspectives.
- Exposure to the information and perspectives of other departments helped members think of new ideas about the product.

C. Customers' Influence^c

Extent to which input and feedback from end users was relied on in the following stages of product development:

- Development of product idea/concept.*
- Evaluation/Screening of product idea/concept.*
- Development of design.*

D. Time Pressure^b

- On this project, team members often wished they had more time to complete their work.
- On this project, team members had plenty of time to think carefully about project-related details.*
- On this project, team members believed they were under a lot of time pressure.

E. Innovativeness from the Perspective of the Firm^d

- An improvement/modification in one of the firm's existing products.
- A new product added to one of the existing product lines.
- A new product that is a new line for the firm, but similar products are offered by other companies.
- A totally new product, and no similar products are offered by other companies.

F. Quality Orientation in the Firm^b

- This organization places a great deal of emphasis on product quality.
- Employees in this firm are highly committed to produce quality products.
- The organization practices total quality management.

*Reverse coded.

^a1 = not at all, 7 = a great deal.

^b1 = strongly disagree, 7 = strongly agree.

^c1 = a great extent, 7 = not at all.

^dSelect one.

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Performance Productivity and Quality of Frontline Employees in Service Organizations

To understand mechanisms that govern the productivity and quality of frontline employees (FLEs), this study (1) provides a conceptual distinction between frontline productivity and quality, (2) proposes an extended role theory-based model for mapping the influence of key antecedents and consequences of FLE productivity and quality, and (3) examines the effects of coping resources—boss support and task control—in helping employees cope with the inherent productivity–quality tension in frontline jobs. Using data from 159 customer service and 147 bill collection representatives, the author examines proposed hypotheses through multiple-group path analysis. The results indicate support for the distinction between productivity and quality. Moreover, with increasing burnout levels, FLEs are found to maintain their productivity levels while their quality deteriorates directly. Relative to boss support, task control emerges as a more powerful resource in aiding FLEs in coping with role tension. Key implications for theory and practice regarding FLE management and effectiveness are discussed.

Frontline employees (FLEs), especially in service organizations, present interesting paradoxes. Although the significance of FLEs for organizational effectiveness is uncontested by managers and researchers alike (Hartline and Ferrell 1996; Larkin and Larkin 1996; Rucci, Kirn, and Quinn 1998), evidence has accumulated with alarming regularity to support Hartline and Ferrell's (1993, p. 62) observation that FLEs "are typically underpaid, undertrained, overworked and highly stressed" (cf. Weatherly and Tansik 1993). Little appears to have changed since Bateson's (1985) analysis of the frontline job as a "three-cornered fight," in which the customer (demanding attention and service quality) and the organization (demanding efficiency and productivity) are at the two ends and the FLE is "caught-in-the-middle." This apparent tension of satisfying management and customers and of meeting productivity and quality goals emerges as a consistent theme that underlies the study of FLEs in the boundary-spanning literature. Not surprisingly, frontline jobs are consistently found to foster burnout and high turnover (Henkoff 1994; Milbank 1993).

Despite its significance, the literature lacks systematic studies of FLE performance productivity and quality con-

structs, the tension inherent in these performance factors, and their antecedents and consequences. The few studies that have appeared tend to examine either FLEs' service quality (e.g., Hartline and Ferrell 1996) or their performance productivity (e.g., Singh, Goolsby, and Rhoads 1994), but rarely both. Yet a simultaneous consideration of these performance dimensions within a nomological model is necessary to provide useful insights into processes that amplify or abate this tension and to draw guidelines for effective management of this tension in FLE jobs. This gap motivated the present study.

The aims of this study are threefold. First, I aim to develop a conceptual framework for understanding FLE performance and defining the dimensions of productivity and quality in service settings. Second, I use and extend a role theory-based nomological model for understanding the antecedents and consequences of FLE performance productivity and quality. Recent research in self-regulating mechanisms and resource conservation (Hobfoll and Freedy 1993) has suggested that role theory models that posit a direct relationship between role stressors and performance are essentially misspecified. This is because such models fail to distinguish between cases in which self-regulating mechanisms succeed in coping with role stressors (possibly resulting in "eustress," or positive effects of stress) and in which they do not (possibly resulting in "distress," or negative effects of stress). Consequently, most prior empirical studies confound the eustress and distress effects of role stressors. I address this misspecification by including burnout tendencies—a construct that is sensitive only to self-regulation failures—as a key mediator between role stressors and FLE performance productivity and quality. Third, I examine the moderating and direct influence of two coping resources—task control and boss support—that potentially help diffuse the inherent tension and stress in FLE roles and performance. Understanding how these coping resources work is likely to offer managers guidelines for doing something

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about the tension in FLE jobs. I begin with a discussion of the proposed model and related literature.

A Proposed Model of Performance Productivity and Quality

The model used to study the determinants and impacts of FLE performance productivity and quality is depicted in Figure 1.

FLE Performance Productivity and Quality

Productivity and quality are posited to be distinct aspects of FLE performance that are positively correlated. Specifically, FLE productivity is assessed by comparing quantifiable output with behavioral standards for both the customer contact (e.g., number of calls handled) and back-room functions (e.g., completing paperwork). For example, in the case of AT&T Universal Card Services, behavioral standards included average speed of answer (average time between calls; standard = 20 seconds), abandon rate (calls abandoned by customers; standard = 3% of incoming calls), and sign-in time (SIT) (time spent interacting with customers; standard = 70% of total time at work). For FLEs working over telephones and related media, the use of

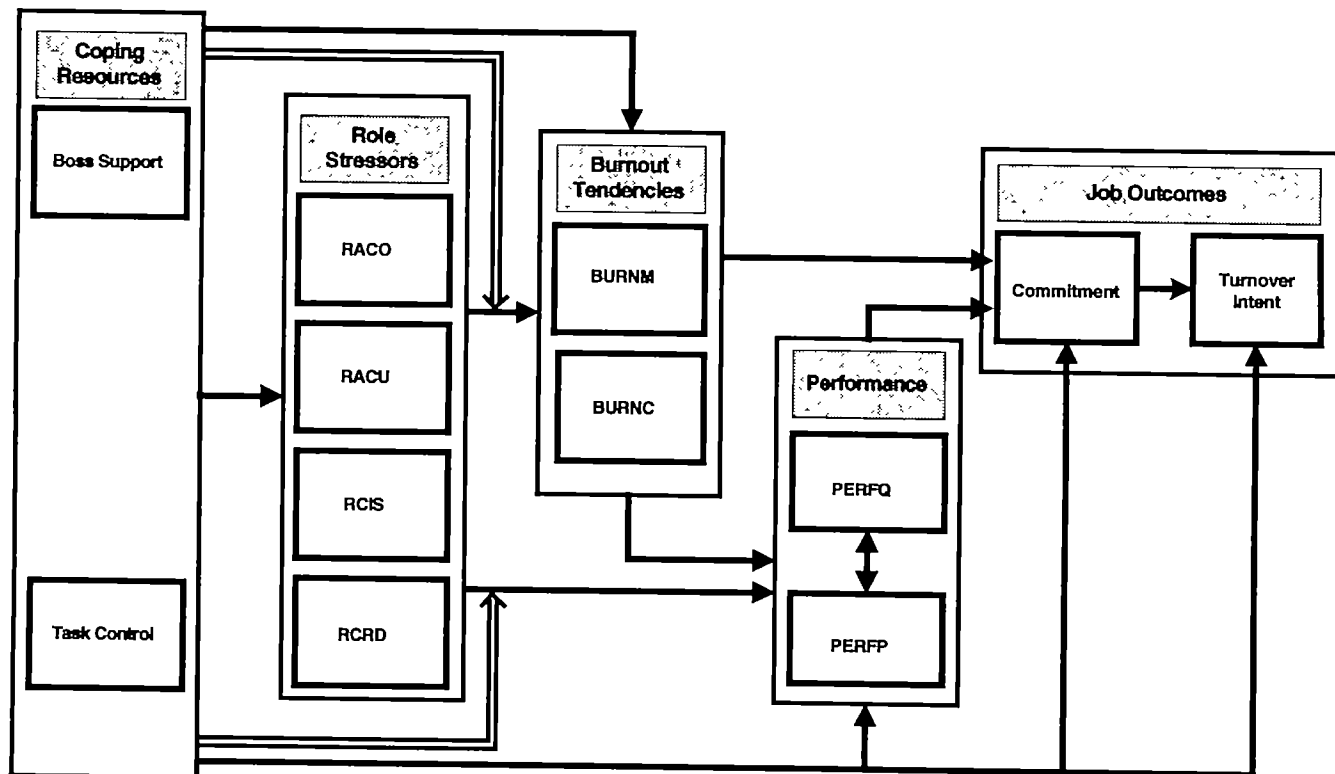
computers enables unobtrusive collection of such behavioral measurements. Other quantifiable behavioral measures include the number of complaint letters handled and the demonstration of knowledge about company procedures and practices.

In contrast, performance quality is concerned with how the service is delivered. Somewhat unique to customer service roles is the demand for emotional labor, whereby employees express socially desired emotions during service transactions that follow some display rules mandated by the organization (Ashforth and Humphrey 1993). For example, a service employee is expected to express positive emotion when interacting with a customer and act in a way to build trust, demonstrate promptness and reliability, and give a sense of personal attention (Hochschild 1983). In turn, a high-quality performance is thought to enhance customer satisfaction and loyalty.

The motivation behind many of the behavioral standards used to measure productivity is often to enhance service quality. Noting that without productivity indicators there is little control over service quality, Heskett, Sasser, and Schlesinger (1997) observe that sound productivity indicators help deliver excellent quality. Ideally, therefore, performance productivity and quality should be

FIGURE 1

The Empirical Model Used to Study the Antecedents and Consequences of FLE Productivity and Quality*



*For the sake of clarity, all hypothesized paths are not explicitly shown. Paths directed toward or emanating out of a framed box imply corresponding paths for each construct within the box. Moderating effects are shown by open arrows.

Notes: BURNM = burnout-management, BURNC = burnout-customer, RACO = role ambiguity-company, RACU = role ambiguity-customer, RCIS = role conflict-inter sender, RCRD = role conflict-resources and demands.

perfectly related, which will result in a lack of discriminant validity. Pragmatically, it is reasonable to expect that several factors would depress the correlation between these performance dimensions. First, Bowen and Schneider (1985) have noted that because of the intangibility aspects of service delivery, managers have imperfect knowledge of "transformation" (e.g., specifying desired output), which results in productivity-quality gaps. Second, researchers argue that productivity and quality discrepancies result from the underlying tension between the ethic of efficiency and the ethic of service that firms must keep in balance to survive. As evolving social systems, firms are rarely in balance. For example, Heskett, Sasser, and Schlesinger (1997) note that though there need not be any trade-offs, many managers (and researchers) become fixated on service quality and do not attend to FLE productivity, which results in lower service value delivered. Third, the use of quantifiable behavioral standards is thought to direct FLEs' efforts to tasks and activities that generate high levels of productivity even if this increase comes at the cost of less quantifiable and measurable quality (Aiello and Kolb 1995). Cogent arguments have been offered that such tendencies are enhanced when rewards and incentives are tied to productivity (Kerr 1997). Thus,

H₁: The performance productivity and quality of FLEs are distinct constructs (i.e., achieve discriminant validity) and are positively correlated.

Burnout Tendencies as Direct Antecedents of FLE Performance and Commitment

Although previous work on burnout tendencies has focused on the helping professions (e.g., nurses), Cordes and Dougherty (1993, p. 621) have characterized this focus as an "unnecessary limitation," because these tendencies are experienced by workers in diverse occupational roles. Specifically, customer service roles are noted as susceptible to burnout because of the high intensity and frequency of interpersonal contact. A notable aspect of these roles is that performance requires interaction with multiple role members such that one or more role members belong to a distinctly different work group and/or organization. For example, a customer service representative (CSR) is required to interact with his or her supervisor as well as the customer to fulfill the role performance requirements.

Because an FLE interacts with multiple role members, it appears inconsistent to conceptualize burnout tendencies as a global tendency aggregated across the different role members. Depending on the role members involved, burnout tendencies involving different role members may not be codependent. In other words, it is plausible that a CSR who evidences burnout tendencies toward his or her customers (e.g., emotional exhaustion, depersonalization) may show none of these tendencies toward the management. For example, in a study involving public welfare service professionals, Lee and Ashforth (1993) find that the shared variance between burnout tendencies toward subordinates and clients is approximately 25%. Similarly, Hartline and Ferrell (1993) use a multiple-identity explana-

tion to account for the negative relationship they obtain between employee commitment and service quality, noting that FLEs who are more committed to the organization may be less committed to customers. In possibly the most direct study to date, Singh, Goolsby, and Rhoads (1994) conceptualize burnout tendencies separately for four role members—namely, customers, boss, coworkers, and management. However, these researchers fail to analyze their findings separately for the multiple role members; instead, they use a highly aggregated and global construct of burnout tendencies. To address this issue, I use a disaggregated construct of FLEs' burnout tendencies involving customers and those involving management.

Using a desegregated conceptualization of burnout tendencies, I posit a complex pattern of differential influences of burnout-customer and burnout-management on the performance and commitment of FLEs. These influences are based on the theories of conservation of resources (Hobfoll and Freedy 1993) and self-regulatory failures (Muraven, Tice, and Baumeister 1998). Employees in stress-producing role relationships are thought to self-regulate in a way that conserves valued resources; however, sometimes regulation is not effective (e.g., demands overwhelm coping efforts), which results in failure and resource loss associated with burnout tendencies. Muraven, Tice, and Baumeister (1998) observe that such regulatory failures are followed by a loss of "self-regulation strength" that is evident in lowered performance and motivational effort. Consistent with this, Singh, Goolsby, and Rhoads (1994) find that burnout tendencies have a significant depletion (negative) effect on performance. However, when FLE performance is viewed from productivity and quality perspectives, these depletion effects may follow complex patterns. For example, because FLEs' productivity is more visible than quality to internal managers, it is likely that FLEs regulate to conserve their productivity by allowing their quality to decline (Aiello and Kolb 1995). Furthermore, because performance quality is more associated with role identity involving customers (Thoits 1983), I expect burnout-customer but not burnout-management to have a dominant depletion effect on quality. Likewise, in their meta-analysis, Lee and Ashforth (1996) report that burnout tendencies of emotional exhaustion and depersonalization are consistently and negatively associated with organizational commitment (corrected $r = -.43$ and $-.42$, respectively). Because organizational commitment is tied into FLEs' role identity regarding their management, I expect burnout-management but not burnout-customer to have a stronger influence. As such, the effects of burnout dimensions on performance quality and organizational commitment are expected to indicate opposite patterns. Therefore,

- H_{2a}: The burnout tendencies toward company management are negatively and significantly related to FLEs' commitment.
- H_{2b}: The burnout tendencies toward customers are negatively but weakly related to FLEs' commitment.
- H_{3a}: The burnout tendencies toward company management are unrelated to FLEs' performance quality or productivity.
- H_{3b}: The burnout tendencies toward customers are negatively and significantly related to FLEs' performance quality but weakly related to their performance productivity.

Role Stressors and Their Influence Pathways

Drawing from role theory (Kahn et al. 1964) and boundary-spanning literature (Adams 1976), researchers have focused on ambiguity and conflict as the critical role stressors in boundary roles (Brown and Peterson 1993). Role ambiguity is the degree to which information is lacking about role expectations and effective performance of a role, and role conflict taps the incompatibility of role expectations and demands. Because of the salience of company and customer facets for FLEs, I focus my attention on these facets of role ambiguity. The role ambiguity–company facet taps FLEs’ uncertainty regarding the company’s role expectations about flexibility in performing role tasks, quantity and priority of various tasks, and requirements for promotion. The role ambiguity–customer facet relates to FLEs’ ambiguity about how to interact with customers, deal with their objections, and present company strengths and benefits. Likewise, I focus on two dimensions of role conflict: (1) role conflict–intersender, which involves conflicting expectations from two or more role partners, and (2) role conflict between role resources and demands, which arises when FLEs are expected to meet increasing role demands without a commensurate increase in time, material, and/or people resources.

The influence of role stressors on burnout tendencies can be understood in the context of self-regulatory and coping mechanisms (Carver, Scheier, and Pozo 1993; Hockey 1993, 1997). Increases in role stressors activate the person to seek homeostasis (e.g., maintain performance) by evoking self-regulatory mechanisms. Lazarus and Folkman (1984) have noted that the self-regulatory mechanisms involve primary (What is the magnitude of threat?) and secondary (How can I cope with it?) appraisals. At the same time, for any person, self-regulation is a limited resource, and effortful coping (e.g., problem-focused) draws on this resource, which results in some depletion afterwards (Muraven, Tice, and Baumeister 1998). Although this self-regulation resource can be recovered over time, continued, persistent exposure to role stressors that constantly deplete this resource without an opportunity for recovery is likely to foster burnout tendencies of emotional exhaustion and depersonalization. Consistent with this expectation, Singh, Goolsby, and Rhoads (1994, p. 559) note that “even in an environment of moderate to low role stressors, chronic stress may significantly erode a person’s ability to cope and deplete his or her reservoir of support ... thereby resulting in burnout.”

Inclusion of disaggregated burnout tendencies allows hypotheses for the differential effects of role stressors. For example, coping with role ambiguity–company is likely to command self-regulation resources that produce a depletion effect, which leads to feelings of emotional exhaustion in dealing with company management and depersonalization of the management. As such, role ambiguity–company is expected to influence burnout-management but not burnout-customer. Conversely, depletion effects resulting from effortful coping with role ambiguity–customer are likely to result in burnout-customer but not burnout-management. Because role conflict emerges from multiple role senders and overall resource/demand discrepancies, corresponding

depletion effects are likely to be more pervasive, possibly contributing to both burnout-customer and burnout-management. Prior research with global role conflict has produced mixed findings (see Behrman and Perreault 1984), and the use of disaggregated conceptualization of role conflict is likely to yield clearer insights. On the basis of the preceding, I propose the following hypotheses for the relationships between role stressors and burnout tendencies involving management and customers:

- H_{4a}: The higher the perceived role ambiguity–company, the greater is the level of burnout tendencies toward company management.
- H_{4b}: The higher the perceived role ambiguity–customer, the greater is the level of burnout tendencies toward customers.
- H₅: The higher the perceived role conflict–intersender and role conflict–resources and demands, the greater are the levels of burnout tendencies toward customers and management.

In addition to their mediated effects through burnout, role stressors are posited to influence FLE performance directly, which results in spillover effects, for two reasons. First, role stressors may have some direct effects when they are not of sufficient magnitude to foster burnout but they consume resources (e.g., coping) that impair performance. This direct exposure effect could occur, for example, when an FLE experiences inadequate resources to meet certain role demands (i.e., role conflict–resources and demands), which requires greater effort on his or her part to overcome the resource gap. In turn, this direct exposure to the role stressor could result in lowered performance quality or productivity or both; however, this negative effect may not be mediated by burnout tendencies because the role conflict–resources and demands experienced by the FLE is neither persistent nor of such magnitude to foster burnout. In these cases, the negative influence of role stressors would be direct. Second, together with the mediated influence through burnout, the direct effects account for the potential for a eustress effect. Specifically, the distress or negative effect of role stressors is evidenced by the pathway mediated by burnout, whereas the eustress or positive effect may be evidenced by a significant, direct (and positive) influence on job outcomes. Using a global construct for role stressors and burnout, Singh, Goolsby, and Rhoads (1994) provide empirical support for these direct and functional effects. Although several studies have examined the direct effects of role stressors (e.g., Hartline and Ferrell 1996; Weatherly and Tansik 1993), the separation of the eustress (unmediated, positive direct effect) and distress (mediated, negative effect through burnout) components of role stressors is not possible without the concurrent inclusion of burnout tendencies. Taken together, this suggests that the spillover or the direct effect of role stressors on performance could be either negative, because of the direct exposure effect, or positive, in accord with the eustress hypothesis. Because of these conflicting possibilities, I propose nondirectional hypotheses as follows:

- H₆: In addition to their mediated effects through burnout, role stressors including role ambiguity–company, role ambiguity–customer, role conflict–intersender, and role conflict–resources and demands will be significantly related to performance productivity.

H₇: In addition to their mediated effects through burnout, role stressors including role ambiguity–company, role ambiguity–customer, role conflict–intersender, and role conflict–resources and demands will be significantly related to performance quality.

Antecedents of Organizational Commitment and Turnover Intent

Previous studies suggest that organizational commitment is one of the most reliable predictors of turnover intentions (Johnston et al. 1990). Consequently, organizational commitment is hypothesized to have a direct effect on turnover intentions and acts as a key mediator of the effect of role stressors, burnout tendencies, and performance. In their meta-analytical study, Brown and Peterson (1993) find that commitment has a dominant negative impact on turnover intentions (–.78), and indeed most of the influence of job attitudes and role stressors is mediated by commitment.

H₈: The higher the organizational commitment of FLEs, the lower are their turnover intentions.

In addition, performance productivity and quality are hypothesized to influence organizational commitment. Although some researchers argue that performance may have terminal value for boundary spanners, there is considerable evidence to suggest that performance is positively associated with other job attitudes, particularly in nonsales contexts (Brown and Peterson 1994). The logic is that high levels of performance engender the belief that the company is a source for future success opportunities, which results in increased commitment to the organization. In their meta-analysis, Brown and Peterson (1993) find a weak but significant relationship between performance and commitment; however, performance was conceptualized as a global construct. Because performance productivity is more visible and quantifiable relative to quality, high levels of productivity are more likely to be noticed and rewarded within organizations (Aiello and Kolb 1995). Thus, performance productivity is likely to have stronger effects on commitment than quality. Accordingly,

H₉: The greater the performance productivity, the higher is the FLE's commitment (strong effects).

H₁₀: The greater the performance quality, the higher is the FLE's commitment (weak effects).

Direct and Moderating Influences of Task Control and Boss Support

Dealing with the stress created by expectations and demands of customers and management, FLEs seek coping resources that will help them self-regulate and stunt the dysfunctional effects of stress on their performance and well-being. I focus on two possible coping resources: (1) *task control* (Bateson 1985; Karasek 1979), which taps an FLE's perception of latitude and authority in dealing with job-related tasks and control over decisions that affect those tasks, and (2) *boss support* (House 1981; Thoits 1995), which captures the socioemotional support that comes from a boss who cares about his or her employees and is fair and competent. The first resource, task control, parallels the work on empower-

ment and autonomy and is rooted in Karasek's (1979) job demand–job control model. The second resource, boss support, is drawn from social support literature (Thoits 1995) and the path–goal theory of leadership. Both resources have figured prominently in general models of role stress and coping (Lazarus and Folkman 1984).

Although these coping resources differ in their organizational implications, they appear to be governed by similar mechanisms (Thoits 1995). Two independent mechanisms are specifically suggested. Abundance of these resources is theorized to cause people to appraise their roles as less threatening and stressful than roles in other environments that are deficient, even though the environments are objectively similar. Moreover, a supportive environment is thought to build commitment, reduce turnover intentions, enhance performance, and possibly counter burnout tendencies in accord with the job characteristic theory. Termed the “direct effect” hypothesis, these mechanisms are consistent with Lazarus and Folkman's (1984) notion of primary appraisals and with the motivating potential of supportive environments proposed by Hackman and Oldham (1976).

Another mechanism for these coping resources relates to secondary appraisals in Lazarus and Folkman's (1984) framework. Under this mechanism, the person draws on these resources to regulate his or her attitude and behavior and overcome the demands imposed by perceived role stressors. Termed the “buffering” hypothesis, it posits that both the availability and instrumentality of coping and support resources (e.g., to help cope with work demands) helps weaken the link between perceived role stressors and a range of job attitudes and outcomes (e.g., performance). Singh, Verbeke, and Rhoads (1996) offer some support for this hypothesis, as they report that the dysfunctional effect of role ambiguity on job satisfaction is curtailed when the environment is employee oriented rather than achievement or procedure oriented (effect = –.51 versus –.63). However, they report evidence contrary to the buffering hypothesis to the extent that the negative effects of role ambiguity on performance were enhanced in environments with greater coping resources (i.e., the enhancing hypothesis). Drawn from Fechner's law,¹ the logic for these enhancing effects is that in highly supportive and resourceful environments, even moderate variations in role stressors appear more discrepant than similar variations in less supportive job environments (Singh, Verbeke, and Rhoads 1996). This greater perceived discrepancy results in enhanced dysfunctional consequences. Therefore, the results for moderating effects are mixed.

Prior research focuses on either the direct or the moderating effects of coping and support resources but rarely on both. Yet these effects are rooted in distinctly different mechanisms. In addition, these effects parallel the distinction between influence on mean values and path coefficients. Specifically, the direct effects hypothesis relates to

¹Fechner's law extends Weber's law by relating the intensity of sensory experience to the intensity of stimulation. It states that when the intensity of stimulation is small, the just noticeable difference is also smaller relative to a high intensity stimulation.

the influence of coping resources on mean values of role stressors and job attitudes and behaviors, whereas the moderating effects hypothesis deals with the influence on path coefficients among various job and role variables. Because these effects are independent, these influences may act either in tandem or in opposition. That is, if these resources have a significant direct and buffering effect, the effects are additive, and resources reduce perceived stressors as well as weaken their dysfunctional effect. In contrast, if significant direct and enhancing effects are obtained instead, their combined influence is mixed, because reduction in perceived stressors acts against their enhanced dysfunctional effect. Consequently, a simultaneous analysis of these possibilities is necessary to obtain deeper insights into these mechanisms.

H₁₁: The greater the task control and/or boss support, the lower are the perceived role stressors, burnout tendencies, and turnover intentions and the higher are FLEs' performance productivity, quality, and commitment (direct effects).

H₁₂: The greater the task controls and/or boss support, the weaker are the dysfunctional effects of role stressors on FLEs' burnout tendencies, productivity, and quality (moderating effects).

Research Design and Method

Setting and Participants

We sought the cooperation of a large, nationally prominent financial services company with a dedicated staff of front-line personnel. The participating company has concentrated its customer service and contact functions at a few national call centers. At each call center, approximately 400 full-time CSRs and bill collection representatives (BCRs) work under common management practices. To control for confounding effects due to variability in organizational (e.g., management) and contextual (e.g., practices) factors, we chose a single call center (one of the largest) located in the northwestern United States for participation. The selected call center had 554 full-time CSRs and 495 BCRs.

In terms of work roles, the CSRs and BCRs represent many features of boundary-spanning positions. Specifically, the CSRs were responsible for handling and rectifying billing problems and selling programs, coordinating tasks with their coworkers, and regularly interacting with their supervisor to seek direction and obtain guidelines. The BCRs were expected to follow up with delinquent accounts, identify sources of errors and problems in billing, work with customers to help them meet their payment obligations, interact with coworkers to maintain consistency, and coordinate with the supervisors to handle the more serious cases. Both CSRs and BCRs were expected to meet daily quotas and were randomly monitored for service quality standards. Similar to much service work, the work setting of these CSRs and BCRs parallels many characteristics of an environment in which burnout could occur, including long hours, lack of autonomy, insufficient resources, and demands to meet quotas and performance goals.

A survey packet was sent to the home address of each CSR and BCR, including (1) a survey questionnaire, (2) a

cover letter from the researchers, (3) a letter of endorsement from the company president, and (4) a postage-paid return envelope addressed to the researchers. Because stress and burnout are sensitive topics, participants were granted complete anonymity (instead of confidentiality) and were asked to complete the survey at their homes (rather than at the office). This approach is generally thought to provide data of high quality and validity, though it often comes at the cost of a lower response rate (Schneider et al. 1996). After three weeks, participants were sent a second wave of packets.

In all, 182 CSRs and 177 BCRs responded to the survey, for a response rate of 33% and 36%, respectively. Response rates of this magnitude are not unusual in mail surveys of similar boundary spanners. Nevertheless, the managers at the call center facility were asked to examine the respondent profile (see Table 1) for representativeness, and a wave analysis was conducted to identify differences among late and early respondents. Both procedures failed to offer clear evidence of systematic biases, as the respondent profiles for CSRs and BCRs appeared reasonable and no significant differences for the key constructs emerged across the two waves. After deleting unusable responses, data from 159 CSRs and 147 BCRs were analyzed for a usable rate of 29% and 30%, respectively.

Measurements

Table 2 summarizes the measurement statistics for the study constructs, and Table 3 provides intercorrelations. All measures had acceptable reliabilities (see Table 2) and psychometric properties. The specific operational terms used are included in the Appendix.

Role Stressors. I used the company and customer facets of role ambiguity from the MULTIRAM scale developed by Singh and Rhoads (1991). The company facet includes three dimensions of ambiguity relating to task flexibility, work priorities, and promotion, whereas the customer facet includes dimensions of interaction, handling objections, and presentation. All responses were obtained on a five-point "very uncertain" versus "very certain" scale. Similarly, I used the intersender and resource-demands dimensions of role conflict by drawing on and adapting House's (1980) work. The intersender dimension taps the conflict due to multiple role senders, whereas the resource/demand dimension captures the conflict between role demands and resources available, in accord with House (1981).

Burnout Tendencies. I used a measure based on that of Singh, Goolsby, and Rhoads (1994, Appendix A, p. 568) that related to the top management and customer role members. Because the dimension of reduced personal accomplishment is found to be poorly correlated with the other burnout dimensions, I included only the emotional exhaustion and depersonalization dimensions (Lee and Ashforth 1996). Consistent with the study focus, these dimensions were used to define the construct of burnout tendencies at the facet level of top management and customers. All responses were obtained on a six-point "very much unlike me" versus "very much like me" scale.

Task Control and Boss Support. The task control construct was measured by a five-item scale adapted from

TABLE 1
Demographic Profile of the Responding CSRs and BCRs

Sex		Education		Age				
	CSRs	BCRs		CSRs	BCRs		CSRs	BCRs
Male	24%	28%	High school	37%	29%	≤ 20 years	4%	6%
Female	76%	72%	1–3 years College	50%	53%	21–25 years	38%	38%
			College degree	12%	15%	26–30 years	19%	21%
			Masters or higher	1%	3%	31–35 years	13%	10%
						36–40 years	8%	10%
						41–45 years	5%	10%
						46–50 years	8%	5%
						≥51 years	5%	5%
Marital Status		Job Experience		Income				
	CSRs	BCRs		CSRs	BCRs		CSRs	BCRs
Married	65%	60%	≤ 1 year	13%	19%	≤ \$9,999	7%	12%
Single	16%	14%	2 years	38%	27%	\$10,000–\$19,999	90%	76%
Divorced/ widowed	17%	21%	3 years	43%	45%	\$20,000–\$29,999	3%	12%
Other	2%	5%	≥ 4 years	6%	9%			

House (1981) that assesses a person's perceived efficacy for influencing the tasks and decisions that affect his or her role as an FLE. Boss support was measured by a four-item scale adapted from Teas (1983) that measures the degree to which the boss recognizes the contributions of an FLE, treats him or her fairly, and is supportive. Both were five-point frequency scales of "never" versus "always," and higher numbers were coded to reflect greater control and support.

Job outcomes. Organizational commitment was operationalized using a six-item scale based on Porter and colleagues' (1974) work. The scale achieved acceptable reliability ($\alpha = .90$ and $.89$ for CSRs and BCRs, respectively). Similarly, turnover intent was assessed by a three-item measure based on Donnelly and Ivancevich's (1975) work. Responses were obtained on a five-point "strongly agree" versus "strongly disagree" Likert scale. This measure has been used in previous research, including studies by Johnston and colleagues (1990).

The performance productivity (PERFP) and quality (PERFQ) scales were developed specifically for this study. I was cognizant of and drew from relevant work in sales (e.g., Behrmann and Perreault 1982) and customer contact management (Hartline and Ferrell 1993), as well as the more general work in organizational psychology (e.g., Kirkpatrick and Locke 1996). Using multiple focus groups with CSRs and BCRs and interviews with managers, I developed an initial set of items that captured the underlying aspects of PERFP and PERFQ. The notion of PERFP was closely and consistently associated by managers and FLEs with meeting quantifiable and measurable performance output indicators and included such things as customer contact time (e.g., SIT) monitored by the computer, completion of paperwork, and adherence to company policies and procedures. In contrast, PERFQ was invariably associated with the interactional performance in FLE–customer exchanges and included such things as giving prompt and individualized attention, building consumer trust and confidence, and

going out of the way to fulfill customer requests. Following pretests and further refinements, I developed 8 items for PERFP and 20 items for PERFQ for the final survey. Each item was asked on a comparative seven-point rating scale (i.e., compared with an average employee in the department) with the endpoints "bottom 20%" and "top 5%." Schneider and colleagues (1996, p. 697) have accumulated considerable empirical evidence to suggest that employee self-reports of performance have "validity ... and are significantly correlated with judgments made by observers external to the organization [e.g., customers]," especially if self-reports are obtained anonymously. Similarly, Churchill and colleagues (1985) have reported that self-reported performance measures are found to have less restriction of range and less error than several purportedly objective measures.

Analytical Approach

The analytical approach involved two steps. First, I examined the convergent, discriminant, and nomological validity of the PERFP and PERFQ constructs using a combination of exploratory and confirmatory analyses. Because of multiple samples, I used one of the data sets (CSR) for exploratory analysis and the second data set (BCR) for confirmatory tests. Note that compared with using two random samples, this is a stronger test of cross-validation because of the systematic differences in the two samples (i.e., CSRs versus BCRs) and because it enables testing for the invariance of the underlying measurements. A major substantive goal of this step was to examine the relationship between PERFP and PERFQ for the two groups of FLEs on the basis of sound and invariant measurements.

Second, I tested the model in Figure 1 and the associated hypotheses separately for the CSR and BCR samples. This involved multiple-group path analysis (MGPA) modeling with the software EQS. This approach enables a simultaneous estimation of all hypothesized relationships across groups. This approach also allows for restricted models with

TABLE 2
Measurement Characteristics for Study Constructs: Description, Number of Items, Reliability, Means, and Standard Deviations

Measure	Scale Description ^a	Source	Number of Items	Reliability ^b	Mean ^b	Standard Deviation ^b
Role Stressors						
RACO	five-point Likert scale with endpoints as 5 = very uncertain and 1 = very certain	Singh and Rhoads (1991)	9	.83 (.81)	2.81 (2.49)	.76 (.72)
RACU	five-point Likert scale with endpoints as 5 = very uncertain and 1 = very certain	Singh and Rhoads (1991)	8	.87 (.91)	2.19 (2.21)	.65 (.67)
RCRD	five-point Likert scale with endpoints as 5 = always and 1 = never	House (1980)	4	.82 (.77)	3.28 (3.07)	1.06 (1.03)
RCIS	five-point Likert scale with endpoints as 5 = always and 1 = never	House (1980)	2	.82 (.76)	3.19 (2.86)	.85 (.80)
Mediating Constructs						
BURNC	six-point Likert scale with endpoints as 1 = very much unlike me and 6 = very much like me	Singh, Goolsby, and Rhoads (1994)	4	.77 (.79)	2.64 (2.55)	1.00 (.98)
BURNM	six-point Likert scale with endpoints as 1 = very much unlike me and 6 = very much like me	Singh, Goolsby, and Rhoads (1994)	4	.90 (.89)	3.68 (3.20)	1.35 (1.45)
Coping Resources						
Task control	five-point Likert scale with endpoints as 1 = never and 5 = always	House (1981)	5	.87 (.88)	3.04 (3.11)	.89 (.88)
Boss support	five-point Likert scale with endpoints as 1 = never and 5 = always	Teas (1983)	4	.92 (.90)	3.62 (3.60)	1.06 (1.11)
Job Outcomes						
PERFP	Self-rated seven-point Likert scale with endpoints as 1 = bottom 20% and 7 = top 5%	Developed in this study	7	.89-.92 (.88-.90)	5.71 (5.38)	1.00 (.98)
PERFQ	Self-rated seven-point Likert scale with endpoints as 1 = bottom 20% and 7 = top 5%	Adapted from Hartline and Ferrell (1993)	17	.77-.93 ^c (.82-.93) ^c	5.80 (5.50)	.79 (.89)
Organizational commitment	five-point Likert scale with endpoints as 1 = strongly disagree and 5 = strongly agree	Porter et al. (1974)	6	.90 (.89)	3.33 (3.76)	.88 (.83)
Turnover Intent	five-point Likert scale with endpoints as 1 = strongly disagree and 5 = strongly agree	Donnelly and Ivancevich (1975)	3	.94 (.96)	3.09 (2.65)	1.27 (1.37)

^aSee the Appendix for specific items used.

^bThe estimates from the BCR sample are enclosed in parentheses. The values without parentheses are for the CSR sample.

^cThese values indicate the range of reliability estimates for the four dimensions of quality.

Notes: BURNM = burnout-management, BURNC = burnout-customer, RACU = role ambiguity-company, RACO = role ambiguity-customer, RCIS = role conflict-inter-sender, RCRD = role conflict-resources and demands.

TABLE 3

Intercorrelations^{a, b}

^bN = 159 for the CSR sample; N = 147 for the BCR sample.

conflict—resources and demands.

conflict—resources and demands.

systematic constraints on posited relationships. These restricted models can be evaluated for their fit to data on the basis of a χ^2 statistic, incremental fit indices (e.g., non-normed fit index [NNFI], comparative fit index [CFI]), and other indicators, including the root mean square error of approximation (RMSEA) (Marsh, Balla, and Hau 1996). The tests of mediation were based on Baron and Kenny's (1986) work.

The estimated model included all the posited relationships, including role stressors, burnout tendencies, performance, job outcomes, and the direct and moderating effects of coping resources. The direct coping effects were modeled by including a direct path from task control and boss support to each construct in the model. The moderating effects required the use of interaction terms. Following Lance's (1988) residual centering approach, interaction terms were obtained for each coping resource–role stressor combination by partialing out the influence of main effects. These interaction terms were then entered in the path analysis. This procedure reduces multicollinearity problems.

Results

Performance Productivity and Quality

To test H_1 , a common factor analysis of the 8 PERFP and 20 PERFQ items from the CSR sample was conducted. The breaks-in-eigenvalue criterion suggested two factors (eigenvalues 4.76 and 1.6; > 78% variance explained) and one item with low communality (< .15). After deletion of the offending item and oblique rotation, the two dimensions of PERFP were interpreted as performance outputs related to customer contact (e.g., SIT) and backroom work (e.g., paperwork), with reliabilities for CSRs of .89 and .92, respectively. The two dimensions were significantly correlated at .50, which indicated the presence of a higher-order factor. For the 20 PERFQ items from the CSR sample, a common factor analysis indicated the presence of four factors (eigenvalues 10.2, 2.0, 1.16, and 1.00) that together explained 71% of the variance. In addition, three items with low communalities and/or split loadings were identified and deleted. The four PERFQ dimensions were related to trust, promptness, reliability, and individualized attention in customer exchanges, with reliabilities of .89, .89, .77, and .93, respectively. The intercorrelations among the PERFQ dimensions range from .46 to .70, which indicates the presence of a higher-order construct.

As a next step, the restricted model of PERFP (two underlying factors) and PERFQ (four underlying factors) was fitted to the CSR sample for additional evidence and to the BCR data for confirmatory evidence. In each case, the cross-loadings were constrained to zero, and the number of factors was specified a priori. The two-factor model of PERFP provided a reasonable fit to the CSR and BCR data.²

²The fit statistics for the productivity items were as follows. CSR: $\chi^2 = 30.8$, d.f. = 13; NFI = .96; NNFI = .96; CFI = .97; RMSEA = .09; and BCR: $\chi^2 = 41.5$, d.f. = 13; NFI = .94; NNFI = .93; CFI = .96; RMSEA = .12. An analysis of residuals suggests that the model does not fully account for the correlation between two adjacent items on the survey that belong to different productivity dimensions. Accounting for this results in a significant drop in χ^2 values and improved fit statistics (e.g., RMSEA < .08).

In addition, all loadings were large and statistically significant. Likewise, the four-factor model of PERFQ provided an acceptable fit to the CSR and BCR samples.³ Accompanied by large and significant loadings, this offers support for the posited measurement model. Finally, using a partial disaggregated approach with at least two indicators for each dimension, a combined model of PERFP and PERFQ was estimated with 12 composite indicators: two higher-order latent constructs and six first-order constructs for the CSR and BCR samples separately (Mulaik and Quartetti 1997). This yielded satisfactory fits for the CSR ($\chi^2 = 72.5$, degrees of freedom [d.f.] = 47; NNFI = .96; CFI = .97; RMSEA = .08) and the BCR ($\chi^2 = 50.8$, d.f. = 47; NNFI = .99; CFI = .99; RMSEA = .02) samples with large and significant loadings. Taken together, the empirical evidence supports H_1 for the structure of the service performance construct with PERFP and PERFQ as separate and distinct facets.

The epistemic correlation between PERFP and PERFQ was .69 for CSR data (.65 for BCR data). To examine if PERFP and PERFQ are distinct, a test of discriminant validity was conducted by comparing two models: (1) a restricted model with the intercorrelation between the higher-order performance dimensions (PERFP and PERFQ) constrained to unity and (2) an unrestricted model with no restriction on this intercorrelation. The difference-in- χ^2 test indicated rejection of the hypothesis that the two models are equivalent for both CSR ($\chi^2 = 17.8$, d.f. = 1) and BCR ($\chi^2 = 20.4$, d.f. = 1) data (both $p < .001$). This further supports H_1 . Substantively, PERFP and PERFQ share less than 50% of their variance, which suggests that they are meaningfully distinct.

Test of the Nomological Model for CSRs and BCRs

The proposed model in Figure 1 was fitted to the CSR and BCR data by means of MGPA performed with EQS. Initially, a fully restricted model was tested in which all estimated coefficients were invariant for the CSR and BCR groups. On the basis of the lagrange multiplier test, constraints with significant test statistics were released in a sequential manner until none of the imposed constraints indicated significant univariate increments to model fit statistic. The estimated coefficients and fit statistics obtained from this final model are in Table 4. The overall goodness-of-fit statistics suggest that the proposed model is consistent with data according to relative (normed fit index [NFI] > .90, CFI and NNFI > .95) and absolute (e.g., residuals, average off-diagonal standardized residual [AOSR], and RMSEA < .10) indices of fit (see Table 4). Although the χ^2 statistic is barely significant ($p = .04$), it is known to be sensitive to trivial discrepancies and thus is a poor indicator of model fit. The R^2 values are substantively large (90% exceeding .20), which suggests that the modeled antecedents account for systematic variance in dependent constructs. Notably, in most cases, the estimated coefficients appear similar for the two FLE groups so that paths that are

³The corresponding fit statistics for the quality items were as follows: CSR: $\chi^2 = 219$, d.f. = 131, NFI = .95; NNFI = .98; CFI = .98; RMSEA = .07; and BCR: $\chi^2 = 243$, d.f. = 131; NFI = .94; NNFI = .97; CFI = .97; RMSEA = .08.

TABLE 4
Estimated Coefficients for the Antecedents and Consequences of FLE Performance^a

Modeled Relationship	CSRs		BCRs	
	Unstandardized ^b	Standardized	Unstandardized ^b	Standardized
Commitment → Turnover intent	-.53 (-9.15)	-.53	-.53 (-9.15)	-.50
Productivity → Commitment	.07 (1.28)	.07	.07 (1.28)	.08
Quality → Commitment	.09 (1.51)	.08	.09 (1.51)	.10
BURNM → Commitment	-.35 (-4.11)	-.34	-.18 (-2.09)	-.20
BURNM → Commitment	-.15 (-2.88)	-.16	-.15 (-2.88)	-.17
BURNM → Productivity	-.06 (-.61)	-.06	-.06 (-.61)	-.06
BURNM → Productivity	-.03 (-.40)	-.03	-.03 (-.40)	-.03
RACO → Productivity	.12 (1.44)	.13	.12 (1.44)	.11
RACU → Productivity	-.31 (-4.09)	-.31	-.31 (-4.09)	-.31
RCIS → Productivity	.06 (.81)	.07	.06 (.81)	.06
RCD → Productivity	-.14 (-1.75)	-.15	-.14 (-1.75)	-.13
BURNM → Quality	.10 (1.91)	.09	.10 (1.91)	.08
BURNM → Quality	-.26 (-3.74)	-.28	-.26 (-3.74)	-.25
RACO → Quality	-.03 (-.36)	-.03	-.03 (-.36)	-.03
RACU → Quality	-.25 (-3.25)	-.25	-.25 (-3.25)	-.24
RCIS → Quality	-.04 (-.54)	-.05	-.04 (-.54)	-.04
RCD → Quality	.06 (.74)	.06	.06 (.74)	.05
RACO → BURNM	.14 (2.36)	.16	.14 (2.36)	.13
RACU → BURNM	.05 (.97)	-.05	.05 (.97)	-.05
RCIS → BURNM	.14 (2.59)	.15	.14 (2.59)	.14
RCD → BURNM	-.06 (-.79)	-.06	.13 (1.81)	.13
RACO → BURNM	.00 (-.04)	.00	.00 (-.04)	.00
RACU → BURNM	.15 (1.98)	.14	.15 (1.98)	.15
RCIS → BURNM	.17 (2.15)	.17	.17 (2.15)	.16
RCD → BURNM	-.04 (-.46)	-.04	-.04 (-.46)	-.04

Overall Model Fit Statistics for Multiple-Group Analyses

χ^2 (d.f.)	263.7 (226)
NFI	.92
NNFI	.98
CFI	.99
AOSR	.05
RMSEA (90% confidence interval)	.024 (.004 to .035)

^aThe estimates reported are from iteratively reweighted generalized least squares solution using EQS. The results are based on multiple-group analyses in which the nomological model was estimated simultaneously in the CSR and BCR groups.

^bT-values are in parentheses. Based on one-tailed t-tests: t-values > 1.3, $p < .10$; t-values > 1.65, $p < .05$; and t-values > 2.33, $p < .01$. Significant coefficients at $p = .05$ are in bold. Coefficients that differ significantly ($p < .05$) across the two groups are in bold italics.

Notes: BURNM = burnout-management, BURNM = burnout-customer, RACO = role ambiguity-company, RACU = role ambiguity-customer, RCIS = role conflict-intersector, RCD = role conflict-resources and demands.

significant (or nonsignificant) for CSRs are consistently significant (or nonsignificant) for the BCRs. Thus, the hypothesized model appears to fit the data reasonably and shows a high degree of consistency across diverse groups of FLEs.

Table 4 reveals the key influence pathways that are supported for CSR and BCR data. For example, I propose in H_{2a} that burnout-management would have a strong negative influence on commitment but burnout-customer would have a weak negative relationship with FLE commitment, in accord with H_{2b} . The results indicate that burnout-management indeed affects commitment negatively for both types of FLE ($B_{CSR/BCR} = -.35/-.18$), whereas burnout-customer is weakly and negatively related to commitment ($B_{CSR/BCR} = -.15$), regardless of FLE group. This supports H_{2a} and H_{2b} . Moreover, the effect of burnout-management on commitment is statistically greater than the corresponding influence of burnout-customer for CSR data ($\Delta\chi^2 = 4.23$, d.f. = 1, $p < .01$) but not for BCR data ($\Delta\chi^2 = 1.30$, d.f. = 1, $p > .25$).

Likewise, burnout-management has a nonsignificant influence on PERFP and an unexpected positive effect on PERFQ ($B_{CSR/BCR} = .10$). This offers partial support for H_{3a} . In contrast, under H_{3b} , I posit that burnout-customer would have a strong negative effect on PERFQ but weak negative effects on commitment and PERFP. The results support this hypothesis, because the negative influence of burnout-customer on PERFQ is large, negative, and invariant ($B_{CSR/BCR} = -.26$), but burnout-customer has only a nonsignificant influence on PERFP ($B_{CSR/BCR} = -.03$). This difference in the influence of burnout-customer on the two performance dimensions is statistically significant ($\Delta\chi^2 = 10.62$, d.f. = 1, $p < .01$), regardless of FLE sample.

In support of H_{4a} , role ambiguity-company significantly affects burnout-management ($B_{CSR/BCR} = .14$) but leaves burnout-customer unperturbed. In contrast, role ambiguity-customer positively affects burnout-customer ($B_{CSR/BCR} = .15$) but not burnout-management, in support of

H_{4b}. Partially in accord with H₅, role conflict–intersender positively influences burnout-management ($B_{CSR/CSR} = .14$) and burnout-customer ($B_{CSR/BCR} = .17$); however, role conflict–resources and demands yields nonsignificant effects except for its effect on burnout-management ($B_{BCR} = .13$). In H₆ and H₇, spillover effects of role stressors on PERFP and PERFQ are hypothesized in addition to their mediated effects through burnout tendencies. Although the mediation effect is not supported for PERFP, significant direct effects are obtained for role ambiguity–customer ($B_{CSR/BCR} = -.31$) and role conflict–resources and demands ($B_{CSR/BCR} = -.14$). In contrast, role ambiguity–customer has a significant negative effect on PERFQ ($B_{CSR/BCR} = -.25$) in addition to the mediated effect through burnout tendencies, which provides partial support for spillover hypotheses. All other hypothesized spillover effects are nonsignificant, which suggests that burnout tendencies are key mediators of role stressor influences at least for PERFQ.

Finally, for the antecedents of turnover intent and commitment, the results offer mixed support. In accord with H₈, commitment significantly reduces turnover intentions ($B_{CSR/BCR} = -.53$), regardless of FLE group, which suggests that the influence of job attitudes and behaviors on turnover intentions is fully mediated by commitment. Contrary to H₉ and H₁₀, however, neither PERFP nor PERFQ affects commitment. Consistent with this, the influence of PERFP on commitment is not statistically different from the corresponding effect of PERFQ ($\Delta\chi^2 = .24$, d.f. = 1, $p > .86$).

Direct and Moderating Influences of Task Control and Boss Support

The results for the direct and moderating effects of task control and boss support are in Tables 5 and 6, respectively. Recall that these effects involved including the task control and boss support variables and their associated interactions with role stressors in a simultaneous MGPA. As such, the estimated coefficients are partial effects that statistically control for the influence of all other modeled antecedents. This approach reduces the misspecification bias that may result from separate analysis of coping resources. Note also that these variables are coded so that higher numbers imply greater coping resources. The mean values in Table 2 indicate that, regardless of group, FLEs perceive that they have greater access to boss support than to task control resources ($\bar{X}_{CSR/BCR} = 3.62/3.60$ versus $3.04/3.11$)

Table 5 reveals that task control aids directly in reducing the perceived level of role stressors ($B_{CSR/BCR} = -.31$ to $-.57$), burnout tendencies ($B_{CSR/BCR} = -.15$ to $-.41$), and turnover intentions ($B_{CSR/BCR} = -.22$) while enhancing FLEs' commitment levels ($B_{CSR/BCR} = .20$), in accord with H₁₁. The only exceptions are PERFP and PERFQ, for which the direct effects are nonsignificant. This pattern of direct effects is invariant across CSRs and BCRs. However, contrary to H₁₂, none of the moderating effects for task control is significant, which suggests that the key mechanism is through direct effects.

The results for boss support in Table 6 provide mixed support for the direct and moderating effect hypotheses. Although there is evidence of significant direct effects, these effects are limited. Specifically, the availability of boss sup-

port directly reduces the perceived levels of role ambiguity–company ($B_{CSR/BCR} = -.17$), role conflict–intersender ($B_{CSR/BCR} = -.12$), and burnout-management ($B_{CSR/BCR} = -.12$) while enhancing commitment levels ($B_{CSR/BCR} = .15$). This partially supports H₁₁. This pattern of direct effects is invariant across CSRs and BCRs. As such, relative to task control, boss support has less pervasive and less potent (in terms of magnitude) direct effects. However, contrary to the case for task control and in accord with H₁₂, some of the moderating effects for boss support are significant. In particular, boss support appears to reduce the effect of role conflict–resources and demands on burnout-management significantly, which is consistent with the buffering hypothesis ($B_{CSR/BCR} = -.10$). At the same time, boss support significantly enhances the dysfunctional effect of role conflict–intersender on burnout-management ($B_{CSR/BCR} = .11$). However, note that under direct effects boss support reduces the perceived level of role conflict–intersender. Consequently, as far as the influence of role conflict–intersender on burnout-management is concerned, the availability of boss support is a mixed resource: It reduces perceived role conflict–intersender but enhances its dysfunctional effect. Finally, moderating effects emerge for role ambiguity–customer's effect on burnout-management for BCRs. That is, increasing levels of boss support tend to enhance the dysfunctional effect of role ambiguity–customer on burnout-management ($B_{BCR} = .17$) for collectors. Such enhancing effects have been reported in prior studies.

Discussion

This study aims to provide insights into FLE performance and its underlying mechanisms by (1) understanding FLE performance dimensions, (2) extending a role theory–based model for FLE performance and identifying burnout tendencies as critical mediators, and (3) examining mechanisms that govern the influence of coping and support resources. Few, if any, prior studies have empirically examined the tension inherent in FLE productivity and quality. In the absence of prior studies, I recognize that it is prudent to view these findings mainly as initial insights rather than definitive understandings. Nevertheless, the consistent pattern of results from disparate FLE samples is compelling. I discuss each of these patterns in turn.

FLE Performance

This study offers support for the notion that productivity and quality are distinct domains of FLE performance that are influenced by different antecedents. I conceptualized performance productivity to reflect FLEs' output in their contacts with customers and backroom work—tasks that are most likely to demand physical and cognitive labor. The performance quality of FLEs was conceptualized to reflect process aspects of their interactions with customers and was thought to be emotionally laborious. Although some researchers have argued that productivity indicators are primarily driven by service quality considerations, these results show that regardless of FLE sample, productivity and quality are distinct constructs that achieve convergent and discriminant validity and share less than 50% of their variance.

TABLE 5
Estimated Coefficients for the Direct and Moderating Effects of Task Control^a

Modeled Relationship	CSRs		BCRs	
	Unstandardized ^b	Standardized	Unstandardized ^b	Standardized
Direct Effects				
Task control → Turnover intent	-.22 (-3.64)	-.22	-.22 (-3.64)	-.22
Task control → Commitment	.20 (3.00)	.21	.20 (3.00)	.22
Task control → Productivity	.02 (.18)	.02	.02 (.18)	.02
Task control → Quality	-.07 (-.73)	-.08	-.07 (-.73)	-.07
Task control → BURNM	-.41 (-6.31)	-.44	-.41 (-6.31)	-.40
Task control → BURNC	-.15 (-1.65)	-.15	-.15 (-1.65)	-.15
Task control → RACO	-.40 (-6.31)	-.39	-.40 (-6.31)	-.45
Task control → RACU	-.31 (-4.45)	-.33	-.31 (-4.45)	-.31
Task control → RCIS	-.48 (-7.34)	-.48	-.48 (-7.34)	-.49
Task control → RCRD	-.57 (-9.02)	-.58	-.57 (-9.02)	-.58
Moderating Effects				
Task control × RACO → Productivity	.01 (.04)	.01	.01 (.01)	.01
Task control × RACU → Productivity	.03 (.38)	.03	.03 (.38)	.03
Task control × RCIS → Productivity	.00 (.01)	.01	.00 (.01)	.00
Task control × RCRD → Productivity	.10 (1.17)	.11	.10 (1.17)	.10
Task control × RACO → Quality	-.04 (-.46)	-.05	-.04 (-.46)	-.04
Task control × RACU → Quality	.03 (.35)	.03	.03 (.35)	.03
Task control × RCIS → Quality	.03 (.39)	.04	.03 (.39)	.03
Task control × RCRD → Quality	-.04 (-.44)	-.04	-.04 (-.44)	-.04
Task control × RACO → BURNM	.05 (.84)	.06	.05 (.84)	.05
Task control × RACU → BURNM	-.03 (-.51)	-.03	-.03 (-.51)	-.03
Task control × RCIS → BURNM	-.02 (-.30)	-.02	-.02 (-.30)	-.02
Task control × RCRD → BURNM	.02 (.28)	.02	.02 (.28)	.02
Task control × RACO → BURNC	-.02 (-.22)	-.02	-.02 (-.22)	-.02
Task control × RACU → BURNC	.01 (.03)	.01	.01 (.03)	.01
Task control × RCIS → BURNC	-.07 (-.87)	-.09	-.07 (-.87)	-.07
Task control × RCRD → BURNC	-.02 (-.24)	-.02	-.02 (-.24)	-.02

^aThe estimates reported are from iteratively reweighted generalized least squares solution using EQS. The results are based on multiple-group analyses in which the nomological model was estimated simultaneously in the CSR and BCR groups.

^bT-values are in parentheses. Based on one-tailed t-tests: t-values > 1.3, $p < .10$; t-values > 1.65, $p < .05$; and t-values > 2.33, $p < .01$. Significant coefficients at $p = .05$ are in bold. Coefficients that differ significantly ($p < .05$) across the two groups are in bold italics.

Notes: BURNM = burnout-management, BURNC = burnout-customer, RACO = role ambiguity-company, RACU = role ambiguity-customer, RCIS = role conflict-intersender, RCRD = role conflict-resources and demands.

More significantly, these performance facets are differentially affected by their antecedents. For example, FLE quality is highly sensitive to burnout tendencies, with negative effects for burnout-customer ($B_{CSR/BCR} = -.26$) and positive effects for burnout-management ($B_{CSR/BCR} = .10$) (to be discussed subsequently). Although significant spillover effects are obtained for role ambiguity-customer ($B_{CSR/BCR} = -.25$) as well, it appears reasonable to view this evidence as supporting the notion that burnout tendencies act as key mediators for the influence of role stressors on FLE quality. In contrast, FLE productivity is not significantly affected by burnout tendencies, which suggests that the mediation role of burnout is not tenable. Instead, productivity is impaired by increasing role conflict-resources and demands ($B_{CSR/BCR} = -.14$) and role ambiguity-customer ($B_{CSR/BCR} = -.31$).

Why does FLE productivity, unlike quality, remain insulated from increasing burnout tendencies? One potential explanation is based on self-regulation processes (Hockey 1993, 1997). According to Hockey, when faced with demands requiring self-regulation, employees regulate to pre-

serve their desired output levels by using up internally and/or externally available coping resources. Because productivity indicators are visible and failure to maintain them is likely to affect pay and incentives, it is plausible that FLEs regulate to reduce variation in performance output, which results in a lack of empirically detectable relationships between modeled antecedents and productivity. In contrast, because quality is less quantifiable and decrements are less likely to be visible, FLEs' motivation to expend self-regulation resources to maintain quality may be lacking. Thus, increased levels of burnout-customer show up directly as lower levels of delivered service quality.

Taken together, the results confirm that productivity and quality are distinct constructs and suggest that they are governed by different self-regulation mechanisms. To the extent that studies that fail to include both performance facets inhibit attention to these contrasting effects, this practice in further research is not warranted. Concurrently, future researchers may wish to include other aspects of FLE performance as well. Specifically, the citizenship behaviors of FLEs deserve attention in this regard.

TABLE 6
Estimated Coefficients for the Direct and Moderating Effects of Boss Support^a

Modeled Relationship	CSRs		BCRs	
	Unstandardized ^b	Standardized	Unstandardized ^b	Standardized
Direct Effects				
Boss support → Turnover intent	-.09 (1.60)	-.09	-.09 (-1.60)	.10
Boss support → Commitment	.15 (2.61)	.15	.15 (2.61)	.17
Boss support → Productivity	-.04 (-.55)	-.04	-.04 (-.55)	-.04
Boss support → Quality	-.03 (-.43)	-.03	-.03 (-.43)	-.03
Boss support → BURNM	-.12 (-2.20)	-.12	-.12 (-2.20)	-.12
Boss support → BURNC	-.05 (-.72)	-.05	-.05 (-.72)	-.05
Boss support → RACO	-.17 (-2.62)	-.16	-.17 (-2.62)	-.16
Boss support → RACU	-.09 (-1.21)	-.09	-.09 (-1.21)	-.09
Boss support → RCIS	-.12 (-1.74)	-.11	-.12 (-1.74)	-.12
Boss support → RCRD	.01 (.18)	.01	.01 (.18)	.01
Moderating Effects				
Boss support × RACO → Productivity	-.07 (-.78)	-.07	-.08 (-.78)	-.07
Boss support × RACU → Productivity	.13 (1.52)	.13	.13 (1.52)	.12
Boss support × RCIS → Productivity	.10 (1.20)	.11	.10 (1.20)	.11
Boss support × RCRD → Productivity	-.10 (-1.21)	-.11	-.10 (-1.21)	-.10
Boss support × RACO → Quality	.08 (.83)	.08	.08 (.83)	.07
Boss support × RACU → Quality	-.07 (-.82)	-.07	-.07 (-.82)	-.07
Boss support × RCIS → Quality	.04 (.43)	.04	.04 (.43)	.04
Boss support × RCRD → Quality	-.02 (-.22)	-.02	-.02 (-.22)	-.02
Boss support × RACO → BURNM	-.05 (-.71)	-.05	-.05 (-.71)	-.05
Boss support × RACU → BURNM	.00 (-.03)	.00	.17 (2.20)	.16
Boss support × RCIS → BURNM	.11 (1.87)	.12	.11 (1.87)	.12
Boss support × RCRD → BURNM	-.10 (-1.75)	-.12	-.10 (-1.75)	-.10
Boss support × RACO → BURNC	.15 (1.55)	.14	.15 (1.55)	.14
Boss support × RACU → BURNC	.02 (.22)	.02	.02 (.22)	.02
Boss support × RCIS → BURNC	.00 (.10)	.00	.00 (.10)	.00
Boss support × RCRD → BURNC	-.06 (-.77)	-.07	-.06 (-.77)	-.07

^aThe estimates reported are from iteratively reweighted generalized least squares solution using EQS. The results are based on multiple-group analyses in which the nomological model was estimated simultaneously in the CSR and BCR groups.

^bT-values are in parentheses. Based on one-tailed t-tests: t-values > 1.3, $p < .10$; t-values > 1.65, $p < .05$; and t-values > 2.33, $p < .01$. Significant coefficients at $p = .05$ are in bold. Coefficients that differ significantly ($p < .05$) across the two groups are in bold italics.

Notes: BURNM = burnout-management, BURNC = burnout-customer, RACO = role ambiguity-company, RACU = role ambiguity-customer, RCIS = role conflict-interender, RCRD = role conflict-resources and demands.

Burnout Tendencies as Mediators in Extended Role Stress Models

Drawing from role stress research, I proposed a model of FLE performance that differed from most prior studies in two ways: (1) It included mostly disaggregated constructs, and (2) burnout tendencies were posited as key mediators of role stressor influences. The rationale for disaggregated constructs was based on the notion that construct specificity matters in substantive models, and a judicious balance between global ("molar") and narrow ("atomistic") construct specifications is desirable. The motivation for including burnout tendencies was to account better for the mechanisms of conservation of resources and self-regulatory failures (Muraven, Tice, and Baumeister 1998).

The results provide evidence that the preceding issues have relevance for role stress research and that they merit careful attention for both theory and practice. Specifically, regardless of the FLE type, a consistent and stable set of significant pathways emerges: (1) role stressors → burnout → quality and (2) role stressors → burnout → commitment →

turnover. There are a few additional unmediated effects (role ambiguity-customer → PERFP and PERFQ). Because burnout is associated with self-regulation failure, these unmediated effects indicate either the direct exposure or the eustress influence—that is, the effect of being exposed to role stressors (dysfunctional) or of successfully dealing with role demands (usually functional). Apparently, operating in an environment of role ambiguity-customer results in a dysfunctional direct exposure effect on productivity and quality. Likewise, role conflict-resources and demands produced a dysfunctional exposure effect on productivity. This suggests that exposure to role ambiguity-customer and role conflict-resources and demands can temporarily impair performance. Persistent exposure to such stressors is likely to generate burnout tendencies that evoke the mediated pathway instead (as discussed subsequently). Evidence of functional eustress influence was also obtained (role ambiguity-company → PERFP) but failed to achieve significance. However, most of the significant influences follow one or the other mediating pathway. Notably, in both pathways, the

mediating role of burnout tendencies is unequivocally evidenced. In other words, the dysfunctional influence of role stressors on FLE commitment and performance quality is invariably mediated by burnout tendencies, which indicates that self-regulation failure must first occur before quality is impaired and commitment diminished. Given this consistent evidence and theoretical foundation, it appears unfortunate that burnout tendencies have been omitted in most previous studies of role stress, and it is likely that this omission stands responsible for much misunderstanding about role stressors.

More significantly, the relationships supported in the preceding pathways follow a meaningful pattern. In particular, role ambiguity–company relates significantly to burnout-management but not burnout-customer. Likewise, uncertainty involving how to deal with customers (role ambiguity–customer) has a dysfunctional influence only on burnout-customer, not on burnout-management. In addition, role conflict–intersender is less likely to be focused on a specific role partner. Consistent with this, role conflict–intersender has a significant, negative influence on both burnout-management and burnout-customer. This pattern of effects is consistent with the notion that the self-regulation failures resulting in burnout tendencies would be directed by the locus of role ambiguity.

Further up these pathways, interesting patterns emerge for the disaggregated burnout tendencies. As noted previously, these burnout tendencies have opposite effects on quality: burnout-customer produces a negative effect, and burnout-management has a positive influence. This unexpected positive relationship between burnout-management and quality parallels Hartline and Ferrell's (1993) finding that organizational commitment and service quality are negatively related for FLEs. Hartline and Ferrell used a multiple-identity explanation to account for this finding by noting that FLEs who are more committed to the organization may be less committed to customers, and vice versa. This underscores the management–customer tension in the front lines. However, both burnout tendencies have a significant, negative influence on commitment, though the dysfunctional effect of burnout-management is greater than that of burnout-customer ($B_{CSR/BCR} = -.35 / -.18$ versus $-.15$). Commitment, in turn, significantly reduces turnover intentions of FLEs ($B_{CSR/BCR} = -.53$).

Has the use of disaggregated constructs provided insights not available previously? I believe my results offer initial evidence that suggests an affirmative answer. The use of disaggregated constructs offers concrete evidence about the implications of competing demands on FLEs that simultaneously pull them toward the ethic of efficiency (management directed) and the ethic of service (customer directed). Increasing stressors arising from management- and customer-related role expectations and demands contribute to increasing levels of burnout tendencies. However, self-regulation failures are specific to implicated role partners, and insulation across different role partners is possible. That is, burnout-customer is insulated from FLEs' role ambiguity–company but not from role ambiguity–customer. Similar insulation effects emerge for burnout-management. Perhaps unfortunately, these insulation effects are

not particularly functional as FLEs try to balance their productivity and quality performance goals in the face of increasing burnout tendencies. Apparently, FLEs achieve this balance by maintaining their productivity (possibly because of pay and incentive considerations) and allowing their quality to deteriorate with increasing burnout-customer. Although burnout-management may appear to have some functional effects as it enhances FLE quality, this result comes at a heavy price of greatly lowered organizational commitment and increased turnover intentions. Thus, increasing management demands are likely to alienate and drive out the very FLEs who continue to provide higher levels of quality. Although these inferences are conjectural, the use of disaggregated burnout constructs reveals a complex pattern of effects that is often obfuscated in most prior studies that operate at a higher level of construct aggregation.

Influence of Coping and Support Resources

Our study sheds light on mechanisms that govern the influence of coping and support resources. I posited two mechanisms: (1) direct effects, by which these resources reduce the perceived level of negative job attitudes (e.g., role stressors, burnout tendencies, turnover intent) and enhance positive attitudes (e.g., performance, commitment), and (2) moderating effects, whereby the operative mechanism influences the relationship of role stressors to burnout tendencies and performance. Because these mechanisms are independent, I noted that the direct and moderating effects may act either in opposition or in tandem. Prior studies have not considered such possibilities.

The results suggest that the coping resources operate mostly through their direct effects. Provision of greater task control and boss support appears to shield FLEs, because they perceive their roles as less stressful and are less likely to succumb to regulation failures (leading to burnout) than are FLEs who lack these resources. These resources also help build FLEs' commitment toward the firm and reduce their intentions to quit (see Tables 5 and 6). Because all surveyed FLEs work at the same site under the same organizational structure and management, they likely face fairly similar objective role and job environments. If valid, this assumption suggests that if service organizations find it difficult to design FLE roles that are free of uncertainty and conflict (e.g., because of the market environment they face), coping resources offer useful shielding devices.

In addition, the direct effects for task control are more pervasive and significantly larger than those for boss support (see Tables 5 and 6). For example, relative to the effect of boss support, the direct effect of task control is at least threefold stronger for burnout-management ($-.41$ versus $-.12$), burnout-customer ($-.15$ versus $-.05$), role ambiguity–customer ($-.31$ versus $-.09$), role conflict–intersender ($-.48$ versus $-.12$), and role conflict–resources and demands ($-.57$ versus $.01$). Likewise, of the ten hypothesized direct effects, eight are significant for task control, whereas only four achieve significance for boss support. Taken together, this indicates that empowering FLEs with control over their tasks (while maintaining control over performance) is more

effective and has greater shielding potential than does providing a supportive boss.

A disparate pattern of results emerges from the test of moderating hypotheses. Of the 16 hypothesized moderating effects, none achieves significance for task control. For boss support, two consistently significant effects across the two samples are obtained. These effects are equivocal, however. Apparently, boss support aids by buffering the effect of role conflict–resources and demands on burnout-management ($B = -.10$) but at the same time makes the FLE more vulnerable to role conflict–intersender ($B = .11$). Interpretation of these effects requires consideration of three interrelated influences: (1) role conflict–intersender directly increases the level of burnout-management ($B = .14$), (2) boss support directly reduces the level of burnout-management ($B = -.12$), and (3) boss support interacts with role conflict–intersender to yield a positive effect on burnout-management ($B = .11$). The combined influence of these effects is plotted in Figure 2. Figure 2, Panel A, indicates that, insofar as the effect of role conflict–intersender on burnout-management is concerned, a greater level of boss support tends to be harmful, as it accentuates this dysfunctional relationship and produces greater levels of burnout-management. This is possibly because, when role expectations of two or more senders are in conflict, the negative effects are enhanced if one of the senders happens to be the boss who is otherwise supportive but is unable to resolve the conflict. Note that this moderating effect is in a direction opposite to the direct effect of boss support, which suggests that the benefits of boss support tend to be “washed” away by its potential to enhance the dysfunctional effect of role conflict–inter-

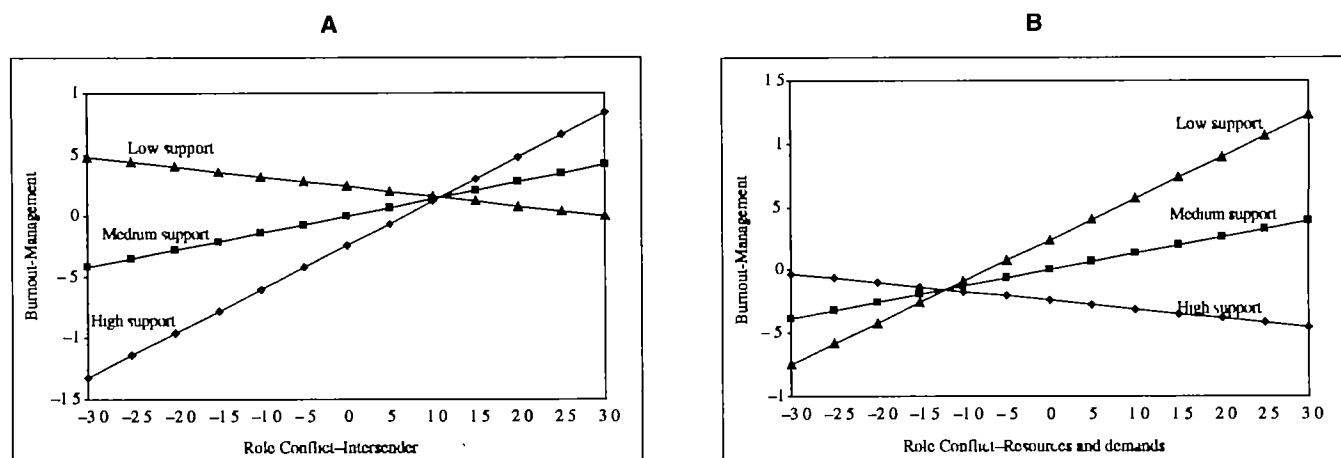
sender. However, as Figure 2, Panel B, indicates, a contrary pattern is evident for the influence of role conflict–resources and demands on burnout-management (shown here for BCRs). In this case, boss support is beneficial, because it attenuates the dysfunctional effect of role conflict–resources and demands. These factors bring about the equivocal effects for boss support.

Although the unequivocal shielding effects of task control overshadow those for boss support, the latter is more frequently experienced in our sample. That is, FLEs perceive that they have greater amount of boss support resources relative to control over their tasks (see Table 2). Bateson (1985) has noted that the manager’s predisposition is against greater task control because of the fear that FLEs will engage in moral hazard by reducing either productivity or quality or both. These fears are often wrongly heightened by surface characteristics of employees who typically fill FLE roles (i.e., low education and low income). Although several suggestions have been offered to empower FLEs (Spreitzer 1995), little systematic research exists that dispels these fears. Until that occurs, boss support is likely to enjoy popularity as a “poor” manager’s safe bet. Further research must seek to enrich managerial knowledge in this area.

Limitations

Several study limitations must be recognized for a balanced discussion of these findings. First, because this study uses a disaggregated model of FLE productivity and quality that is at a higher level of specificity and construct depth than models used in most previous research, future replications and extensions are necessary to circumscribe the generaliz-

FIGURE 2
Plots for Moderating Effects of Boss Support on the Relationship Between Role Stressors and Burnout-Management



Panel A: Boss support enhances the effect of role conflict–intersender on burnout-management. The marginal relationship between role conflict–intersender and burnout-management becomes highly positive as boss support increases from low to high. Results are invariant across CSRs and BCRs. The equation plotted is $\text{burnout-management} = .14 \times \text{role conflict–intersender} - .12 \times \text{boss} + .11 \text{ boss} \times \text{role conflict–intersender}$.

Panel B: Boss support buffers the effect of role conflict–resources and demands on burnout-management. The positive relationship between role conflict–resources and demands and burnout-management vanishes as boss support increases from low to high (shown here for BCRs). Similar results are obtained for CSRs. The equation plotted is $\text{burnout-management} = .13 \times \text{role conflict–resources and demands} - .12 \times \text{boss} - .10 \text{ boss} \times \text{role conflict–resources and demands}$.

ability and applicability of findings reported here. Such future studies should involve sampling from diverse contexts and of other marketing-oriented FLEs. Second, self-report measurements were used to assess FLE performance productivity and quality. Undeniably, these measurements are contaminated by subjective biases. However, on the basis of several studies and meta-analysis of these biases, it is reasonable to state that performance self-reports are more likely to bias the mean values (upward) but less likely to bias their correlations with other constructs (the focus of study here). Also, evidence is accumulating that these biases are substantially reduced and that the validity of self-report performance is enhanced by using anonymous mail surveys (an approach used here), because motivation for self-presentation is curtailed. Third, it is possible that the explained variances are increased by common method variance that creeps into cross-sectional research. However, it is less likely that the differential pattern of results obtained is largely attributable to common method variance, because this variance tends to obfuscate differential relationships. Finally, although sampling from a single site provides control over contextual factors, it limits the generalizability of study findings. Although I sought to compensate for this limitation by including different FLEs (i.e., BCRs and CSRs) and contextual factors (i.e., control and support), alternative designs may be considered that sample across more diverse contexts but focus on specific FLE roles (e.g., CSRs in different strategic business units or geographical areas). Future researchers may wish to explore these possibilities.

Concluding Notes

Are productivity and quality distinct constructs? Are they governed by different mechanisms? Does the tension in the competing demands from customers and management have dysfunctional consequences? What resources matter in stunting these dysfunctional effects? I attempt to provide initial insights into these questions using a role theory-based nomological model and data from FLEs. Indeed, productivity and quality are conceptually and empirically distinct aspects of FLE performance that parallel the distinction between physical or cognitive and emotional labor in customer interactions. The results confirm that FLE quality is sensitive to burnout tendencies that emerge from self-regulation failures as FLEs try to cope with increasing role demands, ambiguity, and conflict. In contrast, FLEs try to maintain their productivity regardless of their increasing burnout levels, probably because of bottom-line concerns (e.g., pay). As such, it is inappropriate to judge the psychological well-being of FLEs on the basis of their productivity variations. Instead, the extra resources needed to maintain productivity in the face of increasing demands are extracted from self-regulation strength, which results in higher burnout tendencies and lower quality. Balancing productivity and quality demands is as critical as providing coping resources, because these demands are surely going to increase in the current market environment. This study confirms that task control is a potent resource, and managers should seek creative methods for deploying this underused force in ways that allay the fear of moral hazard and loafing in the front lines.

APPENDIX

Description of Construct Operational Items Used in this Study*

Construct	Dimension	Item
Turnover intentions		It is likely that I will actively look for a new job next year. I often think about quitting. I will probably look for a job next year.
Organizational commitment		I really care about the fate of this organization. I am willing to put in a great deal of effort beyond what normally is expected in order to help this organization be successful. The organization really inspires me to put forth my best effort. I would accept almost any type of job assignment in order to keep working for this organization. I am extremely glad that I chose this organization to work for over others I was considering at the time I joined. Overall, I am very committed to this organization.
Performance	Contact output	Overall customer contact (e.g., SIT). Productivity Meeting your quotas and targets. Overall performance in reaching objectives. Following the company's suggested telephone call monitor process.
	Backroom work	Providing accurate and complete paperwork. Overall knowledge of company policies and procedures. Keeping abreast of your company's policies.
Performance quality	Trust	Taking the initiative to help your customers even when it is not part of your responsibility. Taking the time to help your customers at the expense of not meeting daily productivity goals. Overall, developing customer trust and confidence in your service.

APPENDIX
Continued

Construct	Dimension	Item
	Promptness	Responding promptly to customer requests, despite your busy workload. Returning telephone calls promptly. Consistently following up on promises made to your customers. Following up after the phone call. Overall, consistently providing prompt service to all of your customers.
	Reliability	Consistently resolving customer concerns the first time. Providing accurate or correct information to the customer. Even though it is not your responsibility, making sure other departments follow through with your customer requests. Telling the customers the straight facts instead of telling them what they want to hear. Overall, performing your job dependably and accurately.
	Individualized attention	Servicing the account with the customer's best interest in mind. Listening attentively to identify and understand the concerns of customers. Working out solutions to each customer's questions or concerns. Overall, providing individualized attention to each customer's concerns.
	Management	I feel dismayed by the actions of top management. I feel burned out from trying to meet top management's expectations. I feel I am becoming less sympathetic toward top management. I feel alienated from top management.
Burnout tendencies	Customer	Working with customers is really a strain for me. I feel I am working too hard for my customers. I feel that I treat some customers as if they were impersonal "objects." I feel indifferent toward some of my customers.
Role ambiguity	Company	How I am expected to handle nonroutine activities on the job. How I should handle my free time on the job. How much freedom of action I am expected to have. The sheer amount of work I am expected to do. Which tasks I should give priority to. How much work I am expected to do. What I can do to get promoted. The possibility of losing my job. What the critical factor is in getting promoted.
	Customers	How I am expected to interact (i.e., friendly or formal) with my customers. How much service I should provide my customers. How I should behave (with customers) while on the job. How I am expected to handle my customers' objections. How I am expected to handle unusual customer problems and situations. How I am expected to deal with a customer's criticisms. Which specific company strengths I should present to customers. Which specific product benefits I am expected to highlight for customers.
Role conflict	Intersender	Trying to meet conflicting demands of various departments. Having to deal with or satisfy too many different people.
	Resource/ demands	Having to do assignments without adequate training. Thinking that the <i>amount</i> of work I do may interfere with how <i>well</i> it gets done. Not having enough help and equipment to get the job done well. Not having enough time to get the job done well.
Task control		Having little control over the tasks I perform (R). Having little say in decisions that affect my work (R). Having no control over what is happening in my work area (R). Having little say in top management's decisions that affect me (R). Not having the authority to do what is required (R).
Boss support		Having a boss who doesn't recognize my contribution (R). Having a boss who favors some employees over others (R). Having a boss who will not go to bat for me (R). Having a boss who is incompetent (R).

*See also Table 2.

Notes: The items that were reverse scored for analysis are indicated by (R).

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Corridors of Influence in the Dissemination of Customer-Oriented Strategy to Customer Contact Service Employees

It is widely held that a customer-oriented firm is more likely to deliver exceptional service quality and create satisfied customers. However, little research has addressed the question of how the orientation can be disseminated among employees throughout the firm. This dissemination is especially important in service firms in which frontline, customer contact employees are responsible for translating a customer-oriented strategy into quality service. The authors propose a structural model that explains how service firms can disseminate their customer-oriented strategy by aligning the strategy with specific management- and employee-initiated control mechanisms (i.e., formalization, empowerment, behavior-based employee evaluation, and work group socialization) that lead to increased commitment and shared values on the part of customer contact employees. The findings indicate that there are three "corridors of influence" between customer-oriented strategy and shared employee values. The dominant corridor, which focuses on dual (management- and employee-initiated) control, emphasizes the importance of work group socialization and organizational commitment in the dissemination of customer-oriented strategy. A secondary corridor focuses on two management-initiated control mechanisms: formalization and behavior-based evaluation. The final corridor, which focuses on the empowerment of customer contact employees, has a more limited impact than originally hypothesized. The authors discuss implications for the implementation of customer-oriented strategy and the management of customer contact employees, along with several directions for further research.

In many cases, customer contact employees are the first and only representation of a service firm. Therefore, customers often base their impressions of the firm largely on the service received from customer contact employees. A sample of service executives claimed that frontline service employees are pivotal in forming a customer's level of perceived service quality (Parasuraman, Zeithaml, and Berry 1985). Thus, it is crucial that frontline customer contact employees stay focused on customers' needs (Kelley 1992).

One method of creating a customer-focused work environment is through customer orientation (Jaworski and Kohli 1993; Kohli and Jaworski 1990). Consistent with Deshpandé, Farley, and Webster (1993, p. 27), this study defines customer orientation as "the set of beliefs that puts the customer's interest first, while not excluding those of all other stakeholders such as owners, managers, and employees, in order to develop a long-term profitable enterprise." In this context, customer orientation is used interchangeably with market orientation, which pertains to "the organization

culture that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers and, thus, continuous superior performance for the business" (Deshpandé, Farley, and Webster 1993, p. 26).

Kelley (1992) argues that customer orientation plays a more important role in service firms than in other firms because of the intangibility, heterogeneity, and inseparability of services (Parasuraman, Zeithaml, and Berry 1985). These characteristics are likely to make the service process (i.e., customer service) an important determinant of customers' quality perceptions (Kelley 1992). Customer-oriented firms also tend to enjoy better performance (measured in profitability or service quality) than do firms employing other orientations. Specifically, Narver and Slater (1990) find that market-oriented firms (defined as those that use a combination of customer orientation, competitor orientation, and interfunctional coordination) experience the highest return on assets, customer retention rate, and human resource management skills. Kelley (1992) further asserts that a customer focus can result in mutually advantageous, long-term relationships with customers.

Despite these advantages, some researchers point out that customer orientation can be effective only when the firm designs the necessary structures, processes, and incentives to operationalize the firm's customer-oriented values (Deshpandé, Farley, and Webster 1993; Slater and Narver 1995). For service firms, this effort hinges on finding methods of disseminating the firm's customer-oriented values and beliefs in a way that inspires customer contact employees to be customer focused (Kelley 1992). Very little re-

Michael D. Hartline is Associate Professor of Marketing, School of Business, Samford University. James G. Maxham III is Assistant Professor of Commerce, McIntire School of Commerce, University of Virginia. Daryl O. McKee is Associate Professor of Marketing, E.J. Ourso College of Business Administration, Louisiana State University. The authors thank the Marketing Science Institute for its financial support of the research that led to this manuscript. They also thank Dan Sherrell and the anonymous *JM* reviewers for their comments and suggestions regarding the preparation and revision of this manuscript.

search, however, describes how service managers can encourage customer contact employees to carry out a customer-oriented strategy. Understanding how a customer-oriented strategy can be effectively disseminated is important because managers are forced to rely on their employees to implement the strategy and ensure customer satisfaction. The purpose of this study, therefore, is to investigate how service firms disseminate their customer-oriented strategy to their employees so that the employees share the customer-oriented values of the firm and are inspired to carry out the strategy. We first review the foundation literature for the study. We then propose hypotheses and describe a structural model of customer-oriented strategy dissemination. Finally, we discuss the results and offer both managerial implications and avenues for further research.

Marketing Control as a Framework for Strategy Dissemination

Our proposed model of customer-oriented strategy dissemination is shown in Figure 1. The firm's customer-oriented strategy is modeled as an exogenous variable in the model. This is appropriate because the purpose of this study is to model how this strategy can be disseminated to customer contact service employees so they share this strategic orientation with the firm. When a customer-oriented strategy is adopted, several structural and procedural mechanisms within the firm must come into alignment before effective dissemination can occur. Marketing control theory is an appropriate backdrop for the hypothesized model relationships and helps clarify how management-initiated and employee-initiated control mechanisms can be employed

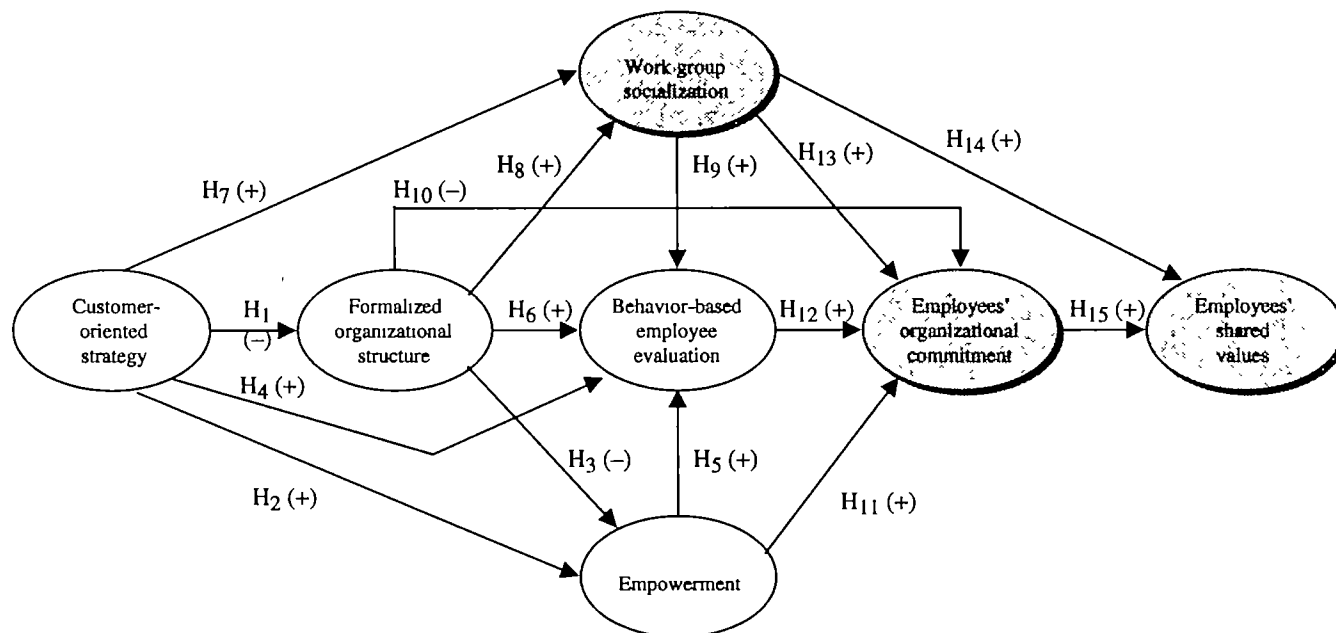
effectively to inspire customer contact employees to perform in accordance with a customer-oriented strategy.

Marketing control refers to management's attempts to influence the behavior and activities of marketing personnel to achieve desired outcomes (Jaworski 1988; Jaworski, Stathakopoulos, and Krishnan 1993). Marketing controls are posited to affect individual actions first and then affect organizational outcomes. From this perspective, marketing control theory plays a vital role in explaining how marketing personnel are encouraged to carry out a customer-oriented marketing strategy. Jaworski's (1988) theory of marketing control identifies two primary control types: formal and informal.

Formal controls are defined as written, management-initiated mechanisms that strive to influence employee behavior and thus positively affect organizational objectives (Jaworski, Stathakopoulos, and Krishnan 1993). Formal controls may be further divided (by management intervention time sequence) into input, output, and process controls. Input controls refer to those controls instituted before performing an activity. A customer service training program, for example, may be used as an input control mechanism to help ensure the implementation of a customer-oriented strategy. Output controls refer to those initiatives that set performance standards and actively monitor and evaluate employee compliance with these standards (e.g., revenue, sales quotas). Process controls refer to mechanisms that strive to influence the means by which performance standards are pursued. Rather than reward outcomes (e.g., number of customers served), process controls attempt to reward employee behaviors that are consistent with organizational goals.

Informal controls are defined as unwritten, worker-initiated directives that purposefully strive to influence cus-

FIGURE 1
Hypothesized Model of Customer-Oriented Strategy Dissemination



Notes: Employee-based constructs are shaded.

customer contact employees' behavior (Jaworski 1988). Jaworski identifies three types of informal control that differ on the basis of the level of aggregation within the firm: self-control (individual), professional/social control (work group), and cultural control (organization). Self-control refers to situations in which employees self-regulate their behavior by setting and monitoring personal goals or objectives. Professional/social control refers to a more aggregated type of control focused on marketing work groups. In particular, employees may set informal controls that guide both work and social behavior within the work group. For example, contact employees may establish and monitor professional controls such as dress codes, productivity levels, and supervisor relationships. Professional/social controls may play an important role in determining the extent to which a work group strives toward mutual goals and upholds similar values. Cultural control is a broadly defined control type—instituted at the organizational level—that attempts to guide employee behavior across all departments. Thus, cultural controls are more abstract than professional/social controls, as they focus on the organization as a whole. Cultural controls often stem from the accumulation of norms, rituals, and stories that guide organizational behavior (Jaworski 1988). Informal controls may prove dominant in firms in which employees perform a diverse set of nonroutine and highly customized tasks (e.g., customer contact employees) (Mills 1985). As such, it may be difficult for managers to set and measure formal output controls objectively because of the lack of task standardization. Managers may instead choose to rely on informal controls that inspire employees to perform in accordance with organizational values and objectives.

Formal and informal controls are likely to be used simultaneously (Jaworski, Stathakopoulos, and Krishnan 1993). The key to organizational effectiveness, however, may depend on the degree to which management- and employee-initiated controls are employed. That is, various control combinations are likely to yield different performance levels. Jaworski, Stathakopoulos, and Krishnan develop a control combination typology—based on low and high levels of management-initiated and employee-initiated controls—that depicts four control states. It follows that managers must strive to choose and implement the best control combination for their firm. We suggest that both highly management-initiated and highly employee-initiated controls are optimal for effective customer orientation. Jaworski, Stathakopoulos, and Krishnan term this control combination a “high control system.” Highly employee-initiated controls are necessary to inspire employees to carry out a customer-oriented strategy. That is, employees must first buy into the professional/social and cultural controls consistent with a customer-oriented strategy before they will actively pursue such a strategy. In addition, the firm's customer-oriented values must be consistent with employees' self-controls and values before employees will commit to the strategy. From this stance, it seems reasonable that highly employee-initiated controls can assist managers in the dissemination of a customer-oriented strategy.

These controls may not be sufficient for effective dissemination to occur, however. Although employee-initiated

controls may help inspire employees, they do little to hold employees accountable for their performance. Employees may not perform well despite their motivation and desire. Therefore, highly management-initiated controls are also necessary to implement a customer-oriented strategy effectively. Management-initiated controls provide standards by which managers can rate employees' marketing-oriented performance (at the individual, work group, or organizational level). Therefore, management-initiated controls provide the firm with a more objective measure to account for and reward customer-oriented behaviors. Firms can arguably achieve customer orientation more effectively by employing high levels of both management- and employee-initiated controls.

Proposed Model and Hypotheses

Our proposed model begins with customer-oriented strategy as the exogenous variable. The model hypothesizes that organizational structure (i.e., formalization), empowerment, behavior-based employee evaluation, socialization, and organizational commitment play important roles in disseminating a customer-oriented strategy in a manner that yields shared organizational values. As is shown in Figure 1, our model includes constructs based on both manager and employee perceptions. This feature enables us to examine the hypothesized relationships in three different groups: (1) relationships among managerial perceptions, (2) relationships between managerial and employee perceptions, and (3) relationships among employee perceptions. The following sections discuss the model's constructs and relevant hypotheses in each group. As we discuss in the Research Method section, another feature of our study is that the level of analysis is the service unit itself (i.e., one manager and several employees in the same work group). As a result, our model attempts to explain variation in responses across service units in the same industry.

Setting the Stage: Aligning Control Mechanisms with Strategy

When a customer-oriented strategy has been adopted by the service firm, several structural and procedural mechanisms must come into alignment to disseminate the strategy effectively to customer contact employees. We examine three management-initiated controls that help set the stage for effective dissemination: formalization, empowerment, and behavior-based evaluation. The hypotheses in this section address relationships among managers' perceptions of these structural and procedural mechanisms.

Organizational structure. Organizational structure refers to the composition of decision-making processes within a firm. In particular, we are concerned with formalization, which is defined here as the degree to which decisions and working relationships are governed by rigid rules and standard policies and procedures (Ruekert, Walker, and Roering 1985). In this highly structured environment, employees perform standardized tasks that are regulated by strict rules and operating procedures (Zeithaml, Berry, and Parasuraman 1988). Such organizations tend to be highly efficient but often cannot adapt to changing conditions (Ruekert,

Walker, and Roering 1985). In this vein, formalization diminishes employees' creativity, as well as their ability to adapt to nonstandardized and nonroutine task environments (Kelley, Longfellow, and Malehorn 1996).

As an element of organizational structure, formalization is a management-initiated input control mechanism (Jaworski 1988). In our model, we posit that the adoption of a customer-oriented strategy requires less reliance on rigid rules and procedures. In a customer-oriented service firm, customer contact employees must be able to adapt and respond quickly to customer needs. For this to occur, it is appropriate for service firms to reduce their reliance on rigid rules and foster an environment in which contact employees believe they are not constantly watched. Because a highly structured environment suppresses the ability of contact employees to respond to customer concerns, formalization is not consistent with the adoption or dissemination of a customer-oriented strategy. Accordingly, we propose the following:

- H₁: The adoption of a customer-oriented strategy is associated with less reliance on formalization in the organizational structure.

Empowerment. Empowerment can be defined as the process of enabling employees by giving them the power and autonomy to exercise control over job-related situations and decisions (Conger and Kanungo 1988). Empowered employees often feel more confident in their ability to contribute to the firm's success, a result that fosters creative thinking and problem solving (Kelley, Longfellow, and Malehorn 1996). Bowen and Lawler (1992) point out several advantages that empowerment brings to service firms. Among these advantages are faster response to customer needs and problems, more-satisfied employees, enthusiastic and warm customer interactions, innovative new ideas, and loyal customers. Empowered employees are also more likely to exhibit customer-oriented behaviors, because they become more flexible and adaptive in the face of changing customer needs (see Scott and Bruce 1994).

On the basis of this perspective, we view empowerment—in the present study—primarily as a management-initiated process, control mechanism. Managers can use empowerment during strategy implementation as a means of increasing employee discretion so that customers are better served. Empowerment can also have a positive effect with respect to employee-initiated control, as it has been associated with pride in workmanship (self-control), teamwork (professional/social control), and shared organizational values (cultural controls) (Bowen and Lawler 1992). We posit that empowerment aids in the dissemination of a customer-oriented strategy by bringing the service firm closer to its customers through increased employee flexibility and adaptation and the reduction of decision lag time. The end result is that empowered customer contact employees can more effectively meet customers' needs.

- H₂: The adoption of a customer-oriented strategy is associated with greater reliance on the use of empowerment

For empowerment to work effectively, a service firm must also reduce its reliance on standardized rules and pro-

cedures (i.e., formalization) (Bowen and Lawler 1992). Rigid rules can inhibit the ability of customer contact employees to exercise their empowered authority to respond to customer needs on the spot. High formalization generally dictates that employees must first seek the input of management before acting on customer concerns or requests. Such bureaucracy is undesirable in customer-oriented service firms, because it slows and stifles employees' responses to customers. Thus, we propose the following:

- H₃: Increased formalization in the organizational structure is associated with a decrease in the use of empowerment.

Behavior-based employee evaluation. In general, employees can be evaluated on the basis of their work-related outcomes or behaviors. Behavior-based evaluation is particularly suited to customer contact employees in that their performance in serving customers' needs is directly related to customer-oriented behaviors (e.g., courtesy, friendliness, problem solving) rather than specific work-related outcomes (e.g., quota, sales volume). Employee behaviors can become important in service settings, because service customers often weigh the service process heavily in their quality evaluations (Parasuraman, Zeithaml, and Berry 1985). Research on learning theory suggests that a focus on behavioral criteria in employee evaluations is ideally suited to reinforcing desirable employee behaviors (see Bolles 1979).

Previous studies have found a strong relationship between the use of behavior-based evaluation and customer-oriented employee behaviors. For example, behavior-based evaluation has been linked to increases in employee competence (Cravens et al. 1993), confidence (Gist and Mitchell 1992), job satisfaction (Oliver and Anderson 1994), and adaptability (Scott and Bruce 1994). These findings are consistent with the work of Zeithaml, Berry, and Parasuraman (1988), who argue that behavior-based evaluation encourages employee performance that is consistent with customer expectations of quality service. Service firms that adopt customer-oriented strategies are particularly interested in encouraging customer-oriented behaviors among customer contact employees. Service firms are able to implement a customer-oriented strategy more effectively by evaluating their employees on behavioral rather than outcome-based criteria. Accordingly, we propose the following:

- H₄: The adoption of a customer-oriented strategy is associated with greater reliance on the use of behavior-based employee evaluation.

In H₂, we hypothesize that the use of empowerment is consistent with the adoption of a customer-oriented strategy. By its very nature, empowerment is also consistent with the use of behavior-based evaluation (Conger and Kanungo 1988). Empowered employees are likely to make mistakes. As a result, firms that evaluate employees on the basis of outcome-based criteria will eventually penalize employees for their mistakes. Behavior-based evaluation focuses on performance criteria that are consistent with the behavioral requirements of empowerment (e.g., making decisions, exercising authority, serving customers' needs). Service firms that empower customer contact employees are better

served when behavioral criteria are emphasized in employee evaluations. This reasoning leads to the following:

H₅: The use of empowerment is associated with an increase in the use of behavior-based employee evaluation.

Behavior-based evaluation systems are extremely difficult to implement (Oliver and Anderson 1994). The highly subjective nature of such systems makes it difficult for managers to know which behaviors to emphasize in the evaluation process. As a result, managers are forced to monitor employee performance more closely and provide considerable direction to employees' efforts (Cravens et al. 1993). Because of the close nature of supervision required by behavior-based evaluation, a service firm may be more likely to use standardized rules or procedures to provide guidance and structure to an otherwise complex and subjective evaluation system. Service firms that possess rigid organizational structures may be more likely to use behavior-based evaluation in an effort to provide a standardized set of procedures to assist managers in their evaluations of employee behaviors. On the basis of this logic, we offer the following:

H₆: Increased formalization in the organizational structure is associated with an increase in the use of behavior-based employee evaluation.

Corridors of Influence Between Managers and Customer Contact Employees

The alignment of management-initiated controls with the customer-oriented strategy has several important effects on employee-initiated controls. In this section, we examine two employee-initiated controls that serve as corridors of influence between managers and customer contact employees: work group socialization (a form of social control) and employees' organizational commitment (a form of self-control). The hypotheses in this section are all dyadic in nature, in that they address relationships between manager perceptions and employee perceptions of the different types of controls in use. These relationships are critical to our model in that they examine directly the dissemination of customer-oriented strategy between managerial actions and employee responses.

Work group socialization. Organizational socialization is defined as the process by which a person acquires the social knowledge and organizational skills necessary to assume an organizational role (Van Maanen and Schein 1979). Along with this acquisition of knowledge and skills, socialization also includes social interaction among organizational members. Organizational socialization is a critical component in the dissemination of a customer-oriented strategy to customer contact employees (Hartline and Ferrell 1993). Kelley (1992) declares that it is essential to provide consistent and accurate socialization to employees in implementing a customer-oriented strategy.

Van Maanen and Schein (1979) conceptualize six dimensions of socialization. Our study focuses on the two dimensions that constitute work group socialization: investiture socialization and serial socialization. We did not examine the four remaining dimensions, because they deal more

with the structure and timing of the training process itself rather than the interpersonal aspects of socialization. Because the investiture and serial socialization dimensions deal exclusively with work group socialization, they represent an important combination of professional/social marketing control and social exchange (see Blau 1964).

Investiture socialization stems from the perspective that employees come to the firm with certain skills, strengths, and characteristics that are valued by the organization (Van Maanen and Schein 1979). After an employee is on board, the investiture socialization process attempts to take advantage of and build on an employee's characteristics by substantiating and enhancing the employee's own view of self. Because of its ability to build employee confidence, investiture socialization is effective in socializing employees to adopt customer-oriented behaviors, as it makes employees feel more comfortable with their work environment and their ability to respond effectively to customers' needs.

Serial socialization occurs when experienced employees socialize newer employees, such as in a mentoring relationship (Van Maanen and Schein 1979). We contend that mentors are an important element in socializing customer contact employees to be more customer oriented. Serial socialization is consistent with both social exchange theory and the enforcement of work group norms through professional/social controls. Social learning theory (Bandura 1977) states that behavior development is greatly affected by mentors. Other research suggests that employees will learn faster and comprehend better when they are socialized by mentors (Fullagar et al. 1995). It seems imperative for service firms to incorporate role models in the training process to optimize customer service. This necessity is due, in part, to the wide variety of problems that can occur when the production and consumption of a product are inseparable (Parasuraman, Zeithaml, and Berry 1985). Thus, it is likely that modeling senior customer contact employees helps newer employees quickly learn the aspects of a customer-oriented strategy and the skills necessary to be customer oriented.

Work group socialization has potentially important implications for service firms. Previous studies have found that work group socialization increases the likelihood that employees will adopt the role orientation and behaviors prescribed by the firm (Allen and Meyer 1990b; Jones 1986). Service firms could employ work group socialization to teach customer contact employees the norms and behaviors that are consistent with a customer-oriented strategy. Customer contact employees who work in an atmosphere of customer orientation are more likely to engage in and enforce the professional/social controls that stem from work group socialization. Accordingly, we offer the following:

H₇: The adoption of a customer-oriented strategy is associated with greater reliance on the use of work group socialization.

Although the adoption of a customer-oriented strategy is associated with less reliance on the use of formalization (H₁), the work group socialization process is likely to prove most effective under this type of rigid structure. That is, standardized rules and procedures can help managers and mentors perform their roles as socialization agents more effectively

and efficiently by acting as guides or rules of thumb in the how-to aspects of investiture and serial socialization (see Van Maanen and Schein 1979). Because of the complexity of work group socialization, rigid organizational structures can provide boundaries that direct and focus the efforts of socialization agents. Therefore, we propose the following:

H₈: Increased formalization in the organizational structure is associated with an increase in the use of work group socialization.

Previous research also indicates that work group socialization is associated with behavior-based evaluation. The customer-oriented attitudes and behaviors that are promulgated in the work group socialization process must be reinforced before learning can take place (Bolles 1979). Customer contact employees are most likely to adopt these socialization-driven behaviors when they know that their performance evaluations are based on the same behavioral criteria (see Stonich 1981). Thus, it follows that service firms must complement the work group socialization process—and the customer-oriented behaviors that are developed during socialization—through the use of behavior-based evaluation. This reasoning leads to the following:

H₉: The use of work group socialization is associated with an increase in the use of behavior-based employee evaluation.

Organizational commitment. Organizational commitment is defined as “the relative strength of an individual’s identification with and involvement in a particular organization” (Steers 1977, p. 46). This definition is consistent with the concept of affective commitment—an employee’s affective or emotional attachment to an organization (Allen and Meyer 1990a). This attachment to the organization makes commitment vital to the process of instilling shared values between the organization and its employees (Kelley 1992). As a form of employee-initiated self-control (Jaworski 1988), commitment causes employees to believe more strongly in the goals and values of the organization (Kelley 1992). As a result, employees who are committed to the organization are more likely to buy into its value system and exert effort toward achieving the organization’s goals (Steers 1977).

Our model hypothesizes three relationships between management-initiated controls and the affective commitment of customer contact employees. First, bureaucratic organizational characteristics, such as formalization, have been shown to decrease employees’ commitment to the organization (Mathieu and Zajac 1990). The use of rigid rules and procedures, whereby employees are constantly watched to ensure their adherence to the rules, may cause employees to lose interest in their jobs (Agarwal and Ramaswami 1993). Consequently, the level of employees’ affective commitment declines. On the basis of these previous studies, we propose the following:

H₁₀: Increased formalization in the organizational structure is associated with a decrease in employees’ organizational commitment.

A second antecedent to employees’ commitment is the use of empowerment. Research has shown consistently that

employees who have more control and autonomy in their jobs exhibit higher levels of affective organizational commitment (Agarwal and Ramaswami 1993; Mathieu and Zajac 1990). Because empowered contact employees gain more control over their work environment, they take more ownership of the job and perceive that they personally contribute to the firm’s overall success. Consequently, these employees are more likely to identify with and become committed to the empowering firm. Therefore, we offer the following:

H₁₁: The use of empowerment is associated with an increase in employees’ organizational commitment.

A third antecedent, behavior-based evaluation, has also been shown to increase employees’ affective organizational commitment (Waldersee and Luthans 1994). Unlike outcome-based evaluation systems, behavior-based systems give employees more direct control over the criteria used to evaluate their performance (Cravens et al. 1993; Oliver and Anderson 1994). This control over performance (granted to employees in a behavior-based system) is important for service firms. Whereas outcome-based performance can be affected by several outside influences, behavior-based performance is directly influenced by the behaviors that customer contact employees exhibit on the job. Oliver and Anderson (1994) find a strong positive association between behavioral control and organizational commitment in a sales force context. The following hypothesis extends previous research by examining the behavioral evaluation–organizational commitment relationship in a services context:

H₁₂: The use of behavior-based employee evaluation is associated with an increase in employees’ organizational commitment.

Customer Contact Employee Responses: Commitment and Shared Values

When both the management-initiated and employee-initiated controls are aligned with the firm’s customer-oriented strategy, customer contact employees are more likely to exhibit the sought-after responses of commitment and shared values. In this section, we examine three hypotheses that address relationships among employee perceptions of work group socialization, organizational commitment, and shared customer-oriented values.

Organizational commitment. One of the primary antecedents of employees’ affective commitment is work group socialization. Previous research provides convincing theoretical and empirical evidence that work group socialization influences organizational commitment significantly. Theoretically, work group socialization increases commitment because of the positive social support provided by investiture socialization and the mentoring relationship that is fostered during serial socialization (Van Maanen and Schein 1979). In empirical studies, work group socialization has been shown to increase employees’ organizational commitment significantly (Allen and Meyer 1990b; Jones 1986). Overall, work group socialization stimulates employee cohesiveness, which often causes employees to identify more strongly with the organization and become more committed

to the firm (Mathieu and Zajac 1990). On the basis of this reasoning, we propose the following:

H₁₃: The use of work group socialization is associated with an increase in employees' organizational commitment.

Shared customer-oriented values. Shared organizational values are one component of an organization's overall culture. Deshpandé and Webster (1989) define organizational culture as the pattern of shared values and beliefs that helps people understand organizational functioning and thus provides norms for appropriate organizational behavior. Prior research has argued strongly for the important role of shared values in the implementation of a firm's strategy. In a sales management context, for example, Siguaw, Brown, and Widing (1994, p. 106) argue that "in deciding the strategy of choice, an important aspect of implementation is to influence salespeople to adopt the chosen orientation in their selling efforts." Some authors further suggest that shared values among a firm's employees can facilitate greatly the implementation of marketing strategy and enhance a firm's performance (see Badovick and Beatty 1987).

Shared values may prove even more important in service firms, because customer contact employees are often inseparable from the product and directly responsible for delivering quality service (Parasuraman, Zeithaml, and Berry 1985). Customer contact employees are often the only representation of the service firm that is visible to the customer. To this extent, contact employees who share the customer-oriented values of the firm are more likely to exhibit behaviors that are consistent with those values and the firm's strategy. When contact employees share the firm's customer-oriented values, the firm's customer-oriented strategy is more likely to be implemented effectively. This reasoning is consistent with the findings of many researchers who assert that when employees share the values of the firm, they will exert considerable effort to uphold those values (see Meglino, Ravlin, and Adkins 1989).

Research indicates that one of the most influential determinants of shared values between employees and the organization is work group socialization. Work group socialization produces a custodial orientation among employees, whereby they adopt organizationally derived norms, customs, and values (Van Maanen and Schein 1979). Some researchers provide empirical support for this reasoning (Allen and Meyer 1990b; Jones 1986). This effect is especially pronounced with respect to the mentoring component of work group socialization. The subjective nature of work group mentoring may cause employees to adopt and internalize the firm's value system more fully (Jones 1986). By instilling confidence in employees and using effective role models, work group socialization can enhance the dissemination of customer-oriented strategy and values to customer contact employees. Therefore, we propose the following:

H₁₄: The use of work group socialization is associated with an increase in shared customer-oriented values between employees and the firm.

From a theoretical perspective, researchers have argued that employees who are affectively committed to the organization are more likely to buy into or share the organization's value system (Ouchi 1981; Steers 1977). In empirical stud-

ies, researchers consistently have found a positive relationship between organizational commitment and shared values (Meglino, Ravlin, and Adkins 1989). On the basis of this theoretical and empirical support, we offer the following:

H₁₅: An increase in employees' organizational commitment is associated with an increase in shared customer-oriented values between employees and the firm.

Research Method

Sample

We selected hotels as our sampling frame because the delivery of hotel services involves ample opportunity for contact with customers. Hotels also represent environments in which managers work alongside customer contact employees, which thereby gives managers the opportunity to observe and influence employee behaviors. To initiate a sample, we contacted the marketing managers of nine hotel chains. Three chains, each offering services in the middle-to-high price/quality range, agreed to participate by providing a complete mailing list of general managers' names and hotel addresses. This procedure resulted in a pool of 444 hotel units, all of which were sampled. The corporate marketing managers of the three chains mailed a letter to each general manager that explained the research and asked for their support. Approximately two weeks later, questionnaire packets were mailed to each general manager. Each packet contained one manager survey, five employee surveys, a page of instructions, and postage-paid return envelopes. Each respondent group was surveyed regarding the issues for which it would be most knowledgeable. Hotel managers were asked about their emphasis on customer-oriented strategy, the organizational structure of their unit, their use of empowerment, and their emphasis on behavioral criteria in employee evaluations. Customer contact employees were asked about their work group socialization experiences, their level of organizational commitment, and the extent to which they shared the customer-oriented values of the organization.

Constraints imposed by the participating hotel chains prohibited us from directly contacting the employees. As a result, we relied on the general managers to distribute the employee surveys. The general managers were instructed to distribute the employee surveys across a broad range of customer contact positions (e.g., front desk, food service, housekeeping, bellstaff). Two months after the initial mailing, a second wave of the same materials was mailed. All questionnaires were returned directly to the researchers.

Of the total sample, 279 different hotel units responded (62.8% unit response rate) by returning at least one questionnaire from a hotel manager or employee. Of the 1003 questionnaires that were returned, all the manager surveys and all but 24 of the employee surveys were usable. Usable questionnaires were returned by 236 hotel managers (53.2% response rate) and 743 employees (33.5% response rate). Because 165 hotels failed to return any type of questionnaire, we tested for nonresponse bias using a time-trend extrapolation test (Armstrong and Overton 1977). We found no differences between early and late employee or manager

respondents on demographic characteristics or any construct examined in this study.

The demographic characteristics of employees and general managers are typical of the hotel industry. Most of the employees are 20 to 30 years of age (63.8%), have some college education (43.3%), and work in front desk or customer service positions (53.7%). Most of the general managers are 31 to 40 years of age (46.6%), have a college degree (46.4%), and have 5 to 15 years of experience in the hotel industry (52.3%). We screened employee respondents to ensure that their jobs involved customer contact by asking them to report their job position on the questionnaire. Customer contact positions were confirmed through discussions with corporate managers. The 182 employees who did not meet this criterion were dropped before the measures and the hypothesized model were tested.

Measures

To remain consistent with previous research, we adapted the measures from previous studies in marketing, management, and psychology (see Table 1). We subjected all measures to confirmatory factor analysis to assess their psychometric properties and unidimensionality. Because of sample size restrictions associated with the large number of measures

used in the study, we performed separate analyses for each sample group using two complete (nonaggregated) data sets. After we accounted for missing data, the sample sizes were 236 responses for managers and 561 responses for contact employees. To assess discriminant validity across both samples, the employee responses were aggregated (averaged) and matched with the manager responses to create a single data set in which the cases represent hotel units rather than individuals. Hotel units that did not provide at least three responses from customer contact employees were dropped. These procedures resulted in a final sample of 176 hotel units, and each unit consisted of the matched responses from one general manager and an average of 3.37 customer contact employees. The details and results of our measure validation procedures are provided in the Appendix.

Analysis and Results

Before estimating the hypothesized model, we computed the variance inflation factor (VIF) for each variable to assess multicollinearity. The VIF, the inverse of $(1 - R^2)$, should be close to 1.00, which indicates little or no multicollinearity. Hair and colleagues (1995) suggest a cutoff value of 10.00 as an acceptable VIF. Among the variables in our study, the

TABLE 1
Measures Used in the Study

Construct	Sources	Operationalization	Reliability
Customer-oriented strategy	Dess and Davis (1984) Schul, Davis, and Hartline (1995)	A three-item, five-point scale that measures the importance placed on customer service elements in the marketing strategy of the hotel unit	α : .71 CR: .71 ^a
Formalization	Hage and Aiken (1967)	A seven-item, five-point scale that measures the extent to which the hotel unit uses formalization in its structure	α : .71 CR: .71
Empowerment	Cook and colleagues (1981)	An eight-item, five-point tolerance-of-freedom scale from the LBDQ XII that measures the extent to which managers allow employees to use their own initiative and judgment on the job	α : .71 CR: .71
Behavior-based evaluation	Bush and colleagues (1990)	A five-item, five-point scale that measures the extent to which managers emphasize behavioral criteria when evaluating customer contact employees	α : .74 CR: .75
Work group socialization	Allen and Meyer (1990b) Jones (1986)	A ten-item, seven-point scale that measures the extent to which customer contact employees are socialized by other employees in a positive, socially supportive manner	α : .81 CR: .81
Organizational commitment	Mathieu and Zajac (1990) Mowday, Steers, and Porter (1979)	An eight-item, seven-point scale that measures the affective (attitudinal) commitment of customer contact employees ^b	α : .91 CR: .91
Shared customer-oriented values	Enz (1986) Wasmer and Bruner (1991)	A seven-item, seven-point scale that measures the extent to which customer contact employees share the customer-oriented values of their organization	α : .84 CR: .84

^a α = coefficient (Cronbach's) alpha; CR = construct reliability (Joreskog 1971).

^bMathieu and Zajac (1990) find that Mowday, Steers, and Porter's (1979) 15-item commitment scale contained two dimensions: affective commitment and desire to remain with the organization. We measured commitment using a subset of 8 items from the original scale that assess affective commitment.

highest VIF occurs for shared customer-oriented values ($VIF = 2.34$, $R^2 = .57$), which indicates that the effect of multicollinearity among the variables is negligible.

We tested the hypothesized model using LISREL 8 (Jöreskog and Sörbom 1993). We accomplished hypothesis testing by examining the completely standardized parameter estimates and their t-values. Estimating the hypothesized model produced the following statistics: $\chi^2_6 = 7.19$ ($p = .304$), goodness-of-fit index (GFI) = .989, adjusted goodness-of-fit index (AGFI) = .947, comparative fit index (CFI) = .995, and parsimony normed fit index (PNFI) = .278. The structural parameter estimates from the hypothesized model are reported in Table 2. One-tailed tests of significance were used to determine the significance of each path coefficient. Because three hypothesized paths were not significant, we dropped them to create a more parsimonious model. Model trimming is appropriate in exploratory research if it is not used as a substitute for a priori hypothesis development (Anderson and Gerbing 1988). Estimating the final trimmed model produced the following statistics: $\chi^2_9 = 9.50$ ($p = .393$), GFI = .986, AGFI = .955, CFI = .998, and PNFI = .413. The structural estimates from the trimmed model are reported in Table 2. A comparison of the fit sta-

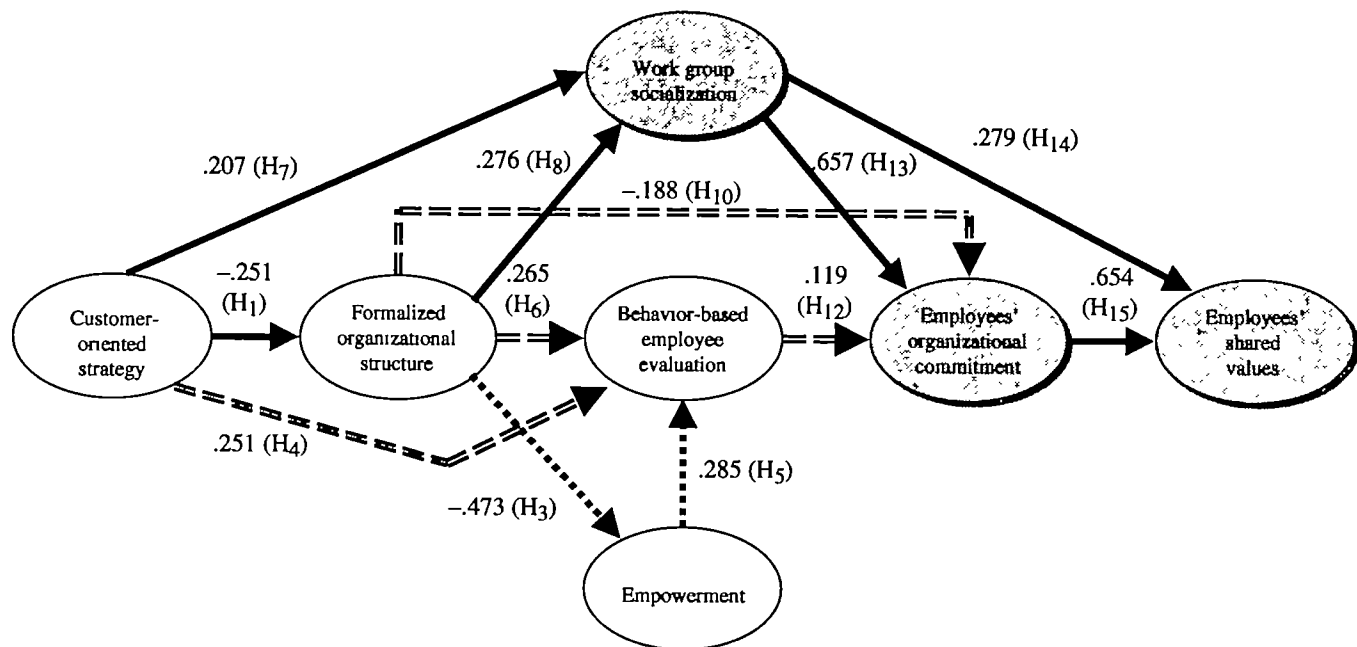
tistics from both models indicates that the final model is more parsimonious and fits somewhat better than the hypothesized model. The final path model is shown in Figure 2.

Our results indicate that the adoption of a customer-oriented strategy is associated with the alignment of several organizational mechanisms and processes to accommodate the strategy. The adoption of a customer-oriented strategy is associated with less reliance on formalization, in support of H_1 . Contrary to H_2 , the adoption of a customer-oriented strategy does not have a significant effect on the use of empowerment. H_3 is supported, however, because formalization exerts a strong negative effect on the use of empowerment. The results also indicate that the adoption of a customer-oriented strategy and the use of empowerment are both associated with increases in behavior-based evaluation, in support of H_4 and H_5 . Finally, H_6 is supported, because formalization is associated with an increase in the use of behavior-based evaluation. Overall, the alignment of these management-initiated controls with the customer-oriented strategy is as expected. However, contrary to expectations, the use of empowerment seems to depend more on the alignment between customer-oriented strategy and formalization

TABLE 2
Structural Parameter Estimates: Hypothesized and Final Path Models of Customer-Oriented Strategy Dissemination (n = 176)

Path	Hypothesis	Hypothesized Model			Final Model		
		Coefficient	t-Value	R ²	Coefficient	t-Value	R ²
Customer-oriented strategy→formalization	H ₁ (−)	−.234	−2.22	.055	−.251	−2.40	.063
Customer-oriented strategy→empowerment	H ₂ (+)	.123	1.17	.234			.224
Formalization→empowerment	H ₃ (−)	−.440	−4.16		−.473	−4.65	
Customer-oriented strategy→behavior-based evaluation	H ₄ (+)	.220	1.97	.132	.251	2.34	.127
Empowerment→behavior-based evaluation	H ₅ (+)	.276	2.18		.285	2.26	
Formalization→behavior-based evaluation	H ₆ (+)	.235	1.77		.265	2.03	
Work group socialization→behavior-based evaluation	H ₉ (+)	.059	.58				
Customer-oriented strategy→work group socialization	H ₇ (+)	.198	1.97	.088	.207	2.05	.091
Formalization→work group socialization	H ₈ (+)	.271	2.67		.276	2.72	
Formalization→organizational commitment	H ₁₀ (−)	−.231	−2.24	.443	−.188	−2.30	.433
Empowerment→organizational commitment	H ₁₁ (+)	−.073	−.72				
Behavior-based evaluation→organizational commitment	H ₁₂ (+)	.134	1.60		.119	1.56	
Work group socialization→organizational commitment	H ₁₃ (+)	.656	8.33		.657	8.40	
Work group socialization→shared values	H ₁₄ (+)	.275	3.30	.734	.279	3.36	.733
Organizational commitment→shared values	H ₁₅ (+)	.657	8.29		.654	8.27	
Goodness-of-fit statistics:		$\chi^2_6 = 7.19$, $p = .304$			$\chi^2_9 = 9.50$, $p = .393$		
		GFI = .989			GFI = .986		
		AGFI = .947			AGFI = .955		
		CFI = .995			CFI = .998		
		PNFI = .278			PNFI = .413		
		RMSR = .021			RMSR = .029		
		Overall R ² = .150			Overall R ² = .157		

FIGURE 2
Corridors of Influence Between Managers and Employees in Customer-Oriented Strategy Dissemination



→ Dominant influence: the strategy/structure/socialization corridor (dual control initiated by managers and employees).

==→ Secondary influence: the strategy/structure/evaluation corridor (management-initiated control).

....→ Tertiary influence: the empowerment corridor (management-initiated control).

Notes: Employee-based constructs are shaded.

than on the alignment between customer-oriented strategy and empowerment.

Among the corridors of influence between managers and customer contact employees, H_7 is supported, because customer-oriented strategy is associated with greater reliance on the use of work group socialization. Likewise, in support of H_8 , formalization has a positive effect on the use of work group socialization. H_9 , however, was not supported, because the effect of work group socialization on the use of behavior-based evaluation is not significant. With respect to the corridors of influence on employee commitment, both H_{10} and H_{12} are supported. Formalization has a negative effect on employees' organizational commitment, whereas behavior-based evaluation has a positive effect on commitment. The relationship between empowerment and employee commitment (H_{11}) is not significant.

Finally, all three hypotheses with respect to the relationships among the employee response constructs are significant. The use of work group socialization has a positive effect on employees' commitment, in support of H_{13} . Likewise, both H_{14} and H_{15} are supported, because work group socialization and organizational commitment have strong, positive effects on employees' shared values. In terms of these employee outcomes, work group socialization has the most prominent effect on organizational commitment, and organizational commitment has the most prominent effect on employees' shared values. Overall, these results seem to underscore the role of employee-initi-

ated control in developing congruence between the organization's strategy and employees' values.

Discussion

The purpose of this study was to test a proposed model of customer orientation dissemination using matched response data from managers and employees. The dyadic nature of the study enables us to generalize the results to work group settings in which managers and employees work together closely in serving customers' needs. These types of settings are common in consumer service and retail firms in which managers are able to observe and influence employee behaviors in ways that promote the implementation of customer-oriented strategy. The dissemination of the customer-oriented strategy to employees is our focus. That is, when managers align the structural and procedural mechanisms of the firm with the strategy, how can they disseminate the strategy to their employees in a manner that makes the employees buy into the strategy?

To answer this question, we worked backward through the final model to examine the strength of the structural relationships and note the major determinants of each construct (e.g., What are the major determinants of shared values? What are the major determinants of work group socialization?). This process identified three corridors of influence between customer-oriented strategy and shared customer-oriented values. As we show in Figure 2, the

dominant corridor is one characterized by dual control initiated by both managers and employees (i.e., a high-control system) (see Jaworski, Stathakopoulos, and Krishnan 1993). This corridor is highly dyadic in nature in that managers create the necessary alignment between strategy and structure and then rely on work group socialization to disseminate the strategy to employees. Contact employees then respond with increased organizational commitment and shared values.

Two additional corridors center on management-initiated control. The secondary corridor relies on the alignment of strategy, structure, and behavior-based evaluation to increase the commitment of customer contact employees. Similar to the dominant corridor, this corridor is also dyadic in that management-initiated controls have a direct impact on employee-based control responses (e.g., commitment). The tertiary corridor relies on the alignment of structure with empowerment. This corridor, which deals only with management-initiated controls, is more limited than originally hypothesized.

Dual Control: The Dominant Corridor of Influence

The results of our study suggest that dual (manager- and employee-initiated) control is more effective at disseminating customer orientation than are manager or employee controls in isolation. The dominant corridor for the dissemination of customer orientation seems to hinge on work group socialization's impact on organizational commitment, which has a subsequent impact on employees' shared values. Work group socialization elevates the employee-organization relationship beyond simple economic exchange to social exchange. Whereas economic exchange is contractual, social exchange is based on a sense of common purpose (Blau 1964; Morrison 1996). As Morrison (1996, p. 505) notes, company-organized programs that enable employees to learn about the organization and its members implicitly communicate to employees "that the organization is committed to building a social-exchange relationship." Such company-organized socialization programs also offer employees an opportunity to form stronger interpersonal attachments, which have been shown to lead to heightened commitment to the organization as a whole (Yoon, Baker, and Ko 1994).

There is also evidence supporting the hypothesis that the socialization process conveys organizational values directly (Morrison 1996; Van Maanen and Schein 1979). This is consistent with the argument that the indoctrination elements of the socialization process—officially presenting the organizational goals and values to employees—can increase employees' identification with those goals and values (Van Maanen and Schein 1979).

The dominant corridor is also dyadic in that the adoption of a customer-oriented strategy and formalization both affect socialization directly. An interesting note is that though customer orientation requires a less rigid work environment, work group socialization is most effective when rules or procedures exist to assist socialization agents. To disseminate the customer-oriented strategy, managers must rely on work group socialization. However, managers must also offer direction to their socialization agents to ensure

that work group socialization is conducive to the organization's goals (Allen and Meyer 1990b; Van Maanen and Schein 1979).

Management-Initiated Control and Corridors of Influence

Similar to the dominant corridor, the secondary corridor of influence contains dyadic elements. However, this corridor is dominated more by management-initiated controls than by employee-initiated controls. For example, our results indicate that the reduction in formalization spurred by the adoption of a customer-oriented strategy has a direct impact on employee commitment (i.e., the indirect effect of strategy on commitment through formalization is positive). This is consistent with the thinking that the variability of service requirements, the uncertainty associated with direct customer involvement, and the intangibility of services create an environment in which formalization is less applicable (Argote 1982; Bowen, Siehl, and Schneider 1989). Furthermore, the results indicate that the alignment of customer-oriented strategy with behavior-based evaluation has a positive effect on employee commitment (i.e., the indirect effect of strategy on commitment through behavior-based evaluation is positive). Behavior-based evaluation gives employees control over their performance evaluations. This is consistent with research that shows positive relationships between employees' control over their jobs and their commitment toward their organizations (Spector 1986).

Some of the results in the tertiary corridor of influence are not as we hypothesized. The lack of a direct association between strategy and empowerment in H_2 suggests that this relationship depends on the alignment of strategy with formalization. That is, employees cannot be empowered until the organization takes the necessary steps to relax its structure. This is entirely consistent with the work of Bowen and Lawler (1992), who argue that empowerment cannot be effective unless the organization reduces its reliance on standardized rules and procedures.

The lack of a direct relationship between empowerment and employee commitment in H_{11} suggests that this relationship is mediated by behavior-based evaluation and that empowerment cannot be effective without an emphasis on behavioral criteria in employee evaluations (see Conger and Kanungo 1988). However, this result could stem from the way we measured empowerment. We measured empowerment from the manager's perspective, because the decision to empower or not to empower employees is a control issue for managers. This approach essentially measures intended empowerment, as it assesses the extent to which managers empower their employees as a part of the overall control system. There is ample evidence from previous research, however, of a relationship between employee-perceived empowerment and employees' organizational commitment. Mathieu and Zajac (1990) find a positive relationship between job autonomy (which is strongly related to empowerment) and organizational commitment. Likewise, in a meta-analysis of 101 samples from 88 studies, Spector (1986) finds that employees' perceived control (empowerment) is related to organizational commitment, involvement, job satisfaction, and motivation.

Alternatively, it can be argued from a social exchange standpoint that empowerment may generate commitment to the supervisor rather than to the organization (Keller and Dansereau 1995). This argument is consistent with the leader-member exchange literature, which suggests that when superiors provide subordinates with latitude and accompanying feelings of self-worth, subordinates reciprocate by behaving consistently with the superior's preferences (Keller and Dansereau 1995). Overall, our findings with respect to empowerment suggest that other factors may intervene between managers' and employees' perceptions about empowerment, which raises issues for further research in this area.

Managerial Implications

The results of this study do not present either/or choices for managers but instead reinforce the advantages of multiple modes of control. Our results do emphasize the importance of work group socialization as a pivotal variable in the dissemination of customer-oriented strategy. Socialization is important because of its direct effect on employees' shared values, as well as its impact on organizational commitment. The latter is critical because commitment has a strong influence on shared values and other important outcomes not included in the present study. Another control mechanism that can be important is behavior-based employee evaluation, which is shown here to be related positively to employees' organizational commitment. By articulating procedures and providing close supervision and feedback, behavior-based evaluation may help clarify the employees' role and contribute to their organizational commitment (Snell 1992).

The negative consequences of formalization in a customer-oriented environment are also emphasized by the results of this study. Formalization has a dampening effect on employees' commitment, which has already been shown to be a critical variable in determining important organizational outcomes. Furthermore, formalization is associated with reduced employee empowerment. Thus, it appears reasonable—from a managerial standpoint—that the more customer-oriented a firm's strategy, the less emphasis the firm should place on formalization in its organizational structure.

Managers should interpret the limited role of empowerment in this study with caution. Although customer-oriented strategy did not predict empowerment and empowerment did not predict employees' organizational commitment, managers should keep in mind that this study uses mixed-responder measures (e.g., manager's use of empowerment and employees' perceptions of commitment). In addition, managers should be cautious about other consequences of low empowerment that are not specified in the present study. For example, several studies demonstrate a relationship between a lack of empowerment and poor job performance (see Guterman and Bargal 1996).

Limitations and Research Implications

The limitations of the present study, and some of its unexpected findings, suggest the need for further research in this area. First, our study is limited by its focus on a single industry setting (i.e., hotels). The usefulness of different control systems is thought by many

scholars to be contingent on environmental factors such as whether employee behavior can be observed at a reasonable cost and whether the employee can reasonably affect performance outcomes (Kowtha 1997; Snell 1992). Kowtha (1997) recommends using behavioral controls if behavior can be readily observed. The hotel industry appears to fit within this domain. In contrast, Kowtha (1997) suggests the use of outcome controls when monitoring is costly and employees are skilled. This might be the situation in certain industries that employ a significant percentage of professional or technical workers, particularly if they are geographically decentralized. In this situation, the role of behavior-based employee evaluation might be different from that found in the present study. Thus, it would seem useful to test the model in industries selected on the basis of theoretically meaningful differences.

Second, the issues associated with measuring empowerment from the manager's perspective indicate the desirability of measuring constructs across both managers and employees. Although such a procedure would be useful for cross-validation, our concerns over questionnaire length prevented this type of data collection process. The issue of manager versus employee perceptions is an important one, especially with respect to empowerment and other forms of marketing control. Further research could address this issue to determine how manager and employee perceptions differ.

Third, because we were not allowed to contact hotel employees directly, we were forced to rely on hotel managers to distribute the employee surveys. We recognize that this procedure could introduce bias into our research design if the managers did not distribute the employee surveys randomly. Although we noted no bias in the distribution of the surveys, the possibility exists that managers gave the surveys to the best or most customer-oriented employees. However, because the managers did not know the aims of our study beforehand, they had no substantive reason to distribute the surveys in this manner. Because of the restrictions imposed by the participating hotels, we could not contact any of the nonrespondents to test for bias in the distribution of surveys. A time-trend extrapolation test (Armstrong and Overton 1977) with respect to the constructs used in our study indicated that the likelihood of this bias is remote.

Finally, our model's explanatory power is limited to its included constructs. Our model could be extended in further research by examining relationships between shared values and other relevant outcomes, such as organizational citizenship behaviors or the ability of employees to adapt during the service encounter. As Ouchi (1981) notes, when employees share organizational values, they tend to act instinctively in ways that benefit the organization. These unsupervised, extra-role behaviors are believed to be a strong force in differentiating a firm's service delivery. Similarly, the ability of employees to adapt service delivery to customer needs can have an important influence on customer satisfaction. The extension of our model to include these and other variables may help further clarify how service firms can best disseminate customer-oriented strategy and values to customer contact employees.

Appendix Measure Validation Procedures

Measurement Model

We analyzed the data using PRELIS to create covariance matrices with pairwise deletion. These matrices were used as input to LISREL 8, in which the completely standardized solution was requested (Jöreskog and Sörbom 1993). In the initial stage of the analysis, several items were deleted from the scales because of nonsignificant t-values. This item-deletion procedure has been suggested as a method for respecifying indicators that do not work out (Anderson and Gerbing 1988). For the remaining items, all t-values exceed 2.00, thus meeting this criterion for convergent validity (Anderson and Gerbing 1988). These results are provided in Table A1.

Before assessing discriminant validity, we aggregated the employee responses within each hotel unit and matched the data to the responses given by the manager of each unit. Likewise, the items in each scale were summed and averaged to create a summed-scale indicator for each construct. Each indicator was standardized (mean = 0, standard deviation = 1) to account for scale differences. To account for measurement error, each λ coefficient was fixed at the square root of its construct reliability, and each θ_{δ} coefficient

was fixed at one minus the construct reliability (see Anderson and Gerbing 1988). The cross-construct correlations (Φ coefficients) resulting from this analysis are reported in Table A2.

Discriminant validity was assessed by performing one-at-a-time chi-square difference tests (the Φ coefficient was constrained to 1.00) for the largest (magnitude of .40 or larger) cross-construct correlations in the total aggregated sample. We also examined the 95% confidence interval (CI) to ensure that the correlation plus or minus two standard errors did not include the value 1.00 (Anderson and Gerbing 1988). The largest correlation occurred between shared customer-oriented values and organizational commitment ($\Phi = .828$; $\chi^2_{\text{diff}} = 80.35$, 6 d.f.; CI = .756 to .900). Three other correlations were greater than .40 in magnitude: shared values/work group socialization ($\Phi = .689$; $\chi^2_{\text{diff}} = 117.15$, 6 d.f.; CI = .575 to .803), work group socialization/organizational commitment ($\Phi = .624$; $\chi^2_{\text{diff}} = 187.56$, 6 d.f.; CI = .506 to .742), and formalization/empowerment ($\Phi = -.469$; $\chi^2_{\text{diff}} = 94.89$, 6 d.f.; CI = -.651 to -.287). In each case, the increase in the value of chi-square exceeded the critical value by a wide margin ($\alpha < .001$), and no confidence interval contained the value 1.00. These results provide evidence for the discriminant validity of the measures.

TABLE A1
Confirmatory Factor Analysis Results

Manager Data (n = 236)

Fit statistics: $\chi^2_{129} = 333.92$, $p = .000$; GFI = .862; AGFI = .818; root mean square residual (RMSR) = .06

Customer-Oriented Strategy	Factor Loading	t-Value
<i>How important is each of the following business practices to the current strategy of your hotel?</i>		
COS1 Being innovative in delivering services to hotel guests.	.599	8.34
COS2 Having high-quality customer service.	.644	8.90
COS3 Immediate response in fulfilling customer needs.	.762	10.26
Formalization		
FM1 I feel that I am my own boss in most matters.	.426	6.12
FM2 A person can make his/her own decisions without checking with anybody else.	.665	10.17
FM3 How things are done here is left up to the person doing the work.	.810	12.81
FM4 People here are allowed to do almost as they please.	.601	9.03
FM5 Most people here make their own rules on the job.	.398	5.68
FM6 Employees are constantly being checked for rule violations. (–)	.326	4.60
FM7 People here feel as though they are constantly being watched to see that they obey all the rules. (–)	.305	4.28
Empowerment		
EM1 I allow employees complete freedom in their work. ^a		
EM2 I permit employees to use their own judgment in solving problems.	.603	8.47
EM3 I encourage initiative in my employees.	.650	9.16
EM4 I let employees do their work the way they think best. ^a		
EM5 I assign tasks, then let employees handle them. ^a		
EM6 I turn employees loose on a job and let them go to it. ^a		
EM7 I allow employees a high degree of initiative.	.644	9.08
EM8 I trust employees to exercise good judgment.	.555	7.74

TABLE A1
Continued

Behavior-Based Evaluation	Factor Loading	t-Value
<i>How important is each of the following factors when you evaluate the performance of customer contact employees?</i>		
BB1 A track record of courteous service to customers. ^a		
BB2 The ability to resolve customer complaints or service problems in an efficient manner.	.807	12.19
BB3 The ability to innovatively deal with unique situations and/or meet customer needs.	.612	9.04
BB4 The employee's commitment to the organization.	.547	7.97
BB5 The employee's commitment to customers.	.626	9.28
Employee Data (n = 561)		
Fit statistics: $\chi^2_{227} = 846.68$, $p = .000$; GFI = .873; AGFI = .846; RMSR = .175		
Work Group Socialization		
S1 Experienced organizational members see advising or training new employees as one of their main job responsibilities.	.545	12.85
S2 I am gaining a clear understanding of my role in this organization by observing my senior colleagues.	.527	12.36
S3 I have received little guidance from experienced employees as to how I should perform my job. (–)	.575	13.70
S4 I have little or no access to people who have previously performed my role. (–)	.442	10.12
S5 I have generally been left alone to discover what my role should be. (–)	.534	12.54
S6 I have been made to feel that my skills and abilities are very important.	.589	14.09
S7 Almost all of my colleagues have been supportive of me personally.	.633	15.42
S8 I have had to change my attitudes and values to be accepted. (–)	.426	9.70
S9 My colleagues have gone out of their way to help me adjust to working.	.669	16.51
S10 I feel that experienced employees have held me at a distance until I conform to their expectations. (–)	.486	11.24
Organizational Commitment		
C1 I am willing to put in a great deal of effort beyond that normally expected in order to make this organization be successful. ^a		
C2 I talk up this organization to my friends as a great organization to work for.	.812	22.84
C3 I find that my values and this organization's values are very similar.	.776	21.35
C4 I am proud to tell others that I am a part of this organization.	.853	24.63
C5 This organization inspires the very best in me in the way of job performance.	.807	22.62
C6 I am extremely glad I chose this organization to work for over other companies I was considering at the time.	.734	19.73
C7 I really care about the fate of this organization. ^a		
C8 For me, this organization is the best of all possible organizations to work for.	.797	22.18
Shared Customer-Oriented Values		
V1 Professionalism: behaving in a businesslike manner.	.652	16.30
V2 Aggressiveness: being considered a bold, enterprising company, actively hustling in the marketplace.	.535	12.80
V3 Ethics: a company's concern for the honesty and integrity of all employees in conducting company activities.	.656	16.44
V4 Creativity: being imaginative and innovative in the development and delivery of services.	.689	17.54
V5 Industry leadership: being considered by everyone in the industry to be the number one company.	.639	15.89
V6 Superior quality and service: providing high-quality services to customers as fast and friendly as possible.	.701	17.92
V7 Employee morale and satisfaction: a positive feeling for the company and job, a feeling of belonging.	.693	17.67

^aItem was dropped during confirmatory factor analysis because of a nonsignificant t-value.

Notes. Negative signs (–) indicate reverse scoring.

TABLE A2
Measure Correlations, Means, and Standard Deviations

Measure	Mean	Standard Deviation	1	2	3	4	5	6
1 Customer-oriented strategy	4.59	.493						
2 Formalization	2.94	.601	-.16					
3 Empowerment	4.08	.493	.16	-.33				
4 Behavior-based evaluation	4.42	.479	.17	.05	.15			
5 Work group socialization	5.20	.711	.09	.18	-.05	.10		
6 Organizational commitment	5.38	.906	.15	-.02	.02	.15	.54	
7 Shared customer-oriented values	5.86	.768	.17	-.02	-.09	.10	.57	.73

Notes: Correlation coefficients of .14 or greater are significant at the $p < .10$ level, coefficients of .18 or greater are significant at the $p < .05$ level, and coefficients of .33 or greater are significant at the $p < .01$ level.

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Managing Marketing Channel Opportunism: The Efficacy of Alternative Governance Mechanisms

The authors examine three governance mechanisms according to how well they mitigate opportunism in marketing channels. Using the U.S. hotel industry as the research context, the authors investigate how opportunism is limited by (1) ownership, (2) investment in transaction-specific assets, and (3) norms of relational exchange. They also investigate how various combinations of these governance mechanisms affect opportunistic behavior in hotel channels. Overall, the results generally support emphasizing relational norms in managing opportunism in marketing channels. The results also indicate that opportunism can be exacerbated when ownership or investments in transaction-specific assets are accentuated as governance mechanisms.

Research in marketing channels has increasingly been devoted to examining the nature of relationships among member firms. Transaction cost analysis and relational exchange theory are the dominant theoretical perspectives taken in these investigations. The normative goal of both perspectives is to minimize the costs of exchange. One means to that end is the development of governance mechanisms that prevent, or at least minimize, the impact of opportunism on channel members.

A firm behaves opportunistically to increase its short-term, unilateral gains. As a result, opportunism by one party can erode the long-term gains potentially accruing to both parties in a dyadic channel relationship. For this reason, the restraint of opportunism is critical to enhancing both channel performance and channel member satisfaction (Gassenheimer, Baucus, and Baucus 1996).

Several mechanisms are available for managing opportunism in relationships among channel partners. For example, one mechanism is a firm's investment in idiosyncratic assets to support its trading relationship. Because an opportunistic firm risks losing this investment, its tendency to act opportunistically is inhibited (Anderson and Weitz 1992). Another mechanism is the development of relational exchange norms, which emphasizes shared social norms and values (Dwyer, Schurr, and Oh 1987; Macneil 1980). These shared norms and values engender a win-win exchange at-

mosphere, thereby mitigating opportunistic behavior within the channel (Heide and John 1992). An alternative to these mechanisms is ownership, by which firms may decide to own their sources of supply or factors of distribution as a means of forestalling opportunistic behaviors (Williamson 1985).

For some time now, researchers have recognized that a firm may employ multiple mechanisms for governing transactions (Bradach and Eccles 1989). In some cases, these mechanisms are functional substitutes for one another (Stump and Heide 1996). In others, multiple mechanisms are used simultaneously (Nevin 1995). Although previous research has examined multiple governance mechanisms (e.g., Anderson 1988; John 1984; Phillips 1982), we follow Rindfleisch and Heide's (1997) call to extend that work by specifically investigating how alternative mechanisms used concurrently supplement and reinforce one another in combination to limit opportunism in marketing channels.

In this research, we focus on three specific mechanisms for mitigating opportunism in marketing channels: (1) ownership, (2) investment in transaction-specific assets (TSAs), and (3) development of relational exchange norms. Our objective is to investigate the efficacy of each in managing opportunism. We also study how these three mechanisms interact to limit opportunistic behavior most effectively. Such knowledge will help us provide managers with a better understanding of which governance mechanisms to use and how to combine them with other mechanisms. With this understanding, managers can more effectively and efficiently manage opportunism in their channels and thereby reduce the costs of marketing their goods and services.

We begin with a brief discussion of opportunism in marketing channels and then describe three mechanisms for governing marketing channels. Inspired by both transaction cost analysis (Williamson 1975, 1985) and relational exchange theory (Dwyer, Schurr, and Oh 1987; Macneil 1980), we develop hypotheses that specify the impact of these governance mechanisms on opportunism. Next, we describe an empirical test of our hypotheses and then discuss the results of this study, emphasizing how these alter-

James R. Brown is Professor of Marketing, Pamplin College of Business, Virginia Polytechnic Institute and State University. Chekitan S. Dev is Associate Professor of Strategic Marketing, School of Hotel Administration, Cornell University. Dong-Jin Lee is Visiting Assistant Professor of Marketing, Pamplin College of Business, Virginia Polytechnic Institute and State University; during the preparation of the manuscript, he was Senior Lecturer of Marketing, University of Western Australia. The authors gratefully acknowledge support for this study from the two hotel companies studied as well as the summer research programs of the Pamplin College of Business and the Cornell School of Hotel Administration. The able assistance of Reed Fisher is immensely appreciated, as are the helpful comments of Shankar Ganesan, Janet E. Keith, and the anonymous *JM* reviewers.

native governance mechanisms can be used for either preventing or restraining opportunism. We conclude by assessing the study's contributions to the understanding of marketing channel relations and proposing directions for further research.

Note that the hypotheses are tested in the context of vertical marketing systems in a service industry setting. The service sector accounts for approximately 75% of the U.S. gross national product and employs four of five workers (Rust, Zahorik, and Keiningham 1996, p. 4). Most studies on services concentrate on the firm–customer relationship (e.g., Berry 1995), but little research investigates marketing channels for services other than those for fast food. Therefore, the service sector represents a relatively large and untapped setting for marketing channels research. In this study, we focus on a single service industry context—the hotel industry. Specifically, we study channel relationships between hotels and their brand headquarters. Note that a hotel's brand headquarters is the organization that is primarily responsible for developing and maintaining the overall marketing program, including the brand identity, associated with a particular hotel property. The chief reason we chose this setting is that hotel chains use a variety of mechanisms to govern their hotels (e.g., Red Roof Inns' corporate ownership of its hotels, Holiday Inn's franchised agreements with independently owned hotels).¹ Thus, this setting enables us to evaluate the efficacy of various governance mechanisms.

Opportunism

As noted previously, this research examines the efficacy of several governance mechanisms used in hotel marketing channels. Alternative governance mechanisms are used for various reasons (Bradach 1997). For example, some governance mechanisms (e.g., fast-food franchise systems) are well suited to ensuring a uniform market offering. Adapting to rapid market changes is a strength of other governance arrangements (e.g., market exchange among the independent channel institutions handling fresh produce). Achieving economies of scale and/or economies of scope is among the reasons that firms use common ownership (e.g., mass merchandisers that integrate the wholesaling function). It is also used to benchmark the performance of independent distributors (e.g., franchisors with company-owned stores). A central premise of transaction cost analysis provides another reason why governance mechanisms are used: to limit opportunistic behavior by the exchange partners (Williamson 1985, p. 48). We focus on this role of governance.

Opportunism “refers to a lack of candor or honesty in transactions, to include self-interest seeking with guile” (Williamson 1975, p. 9). For example, one important asset that a brand headquarters risks when hotels operate under its brand name is the equity it has built up in its brand (see Williamson 1996). Hotels operating under this brand name

can engage in opportunism before the actual formation of the relationship (i.e., *ex ante* opportunism), or they can behave opportunistically after the relationship has been launched (i.e., *ex post* opportunism). Either form of opportunism can erode the value of the brand. However, in this study we focus on the *ex post* form of opportunism.

Ex post opportunism is the failure of an exchange partner to perform without guile (see John 1984; Williamson 1975). It includes withholding or distorting information to “mislead, distort, obfuscate, or otherwise confuse” (Williamson 1985, p. 47). It can also include shirking, which involves “not delivering the promised action and resources, and failing to do this on a fairly systematic and sustained basis” (Hardy and Magrath 1989, p. 123). Hotel chains protect themselves against *ex post* franchisee opportunism in several ways. Indeed, the goal of this research is to investigate how selected mechanisms for governing brand headquarters–hotel relationships mitigate the hotels' *ex post* opportunistic behaviors.

Mechanisms for Mitigating Opportunism

Following Heide (1994, p. 72), we view governance as “a multidimensional phenomenon which encompasses the initiation, termination, and ongoing relationship maintenance between a set of parties.” *Governance mechanisms* are those tools that are used to establish and structure exchange relationships (see Heide 1994, p. 72, n. 2). And, as Williamson (1985, pp. 56–57) notes, “governance structures differ in their capacities to respond effectively to disturbances [i.e., opportunism].” Accordingly, we examine the efficacy of three different mechanisms for mitigating opportunism in hotel marketing channels: (1) brand headquarters' ownership of the hotel, (2) idiosyncratic investments made by the hotel, and (3) relational exchange norms developed between the hotel and its brand headquarters.

Ownership

A central tenet of transaction cost analysis is that investments in TSAs are often better safeguarded through vertical integration (Anderson 1988; John and Weitz 1988; Williamson 1975, 1985). Ownership enables the hotel brand headquarters to manage its hotels' opportunistic tendencies in two ways: (1) The rights of ownership offer the potential for a richer system of rewards and punishments, and (2) the organizational culture shared by the brand headquarters and its hotels provides common norms and values that more closely align their interests (Rindfleisch and Heide 1997, p. 32).

First, the rights of ownership under vertical integration, including the use of fiat, permit a firm to use more extensive monitoring and surveillance (Williamson 1975). For example, the rights of ownership in hotel channels enable brand headquarters to access whatever records, conduct whatever inspections, and request whatever reports it deems necessary to evaluate the behavior and outcomes of a particular hotel. Furthermore, a vertically integrated firm can use more subtle rewards (e.g., assignments to more desirable hotels) and more extensive sanctions (e.g., suspensions with or

¹For fuller discussions of these and other mechanisms used to govern vertical relationships in the hotel industry, see Dev and Brown (1991, p. 25) and Lewis, Chambers, and Chacko (1995, pp. 650–80).

without pay) with employees than with independent channel partners (Anderson and Weitz 1986). In addition, the incentive to behave opportunistically weakens as the partners are no longer independent and therefore can no longer gain without hurting themselves (Williamson 1985). Thus, in hotel channels, chain ownership controls hotel opportunism through a fuller system of incentives and disincentives that makes opportunistic behavior less attractive (i.e., more costly and less rewarding).

Second, under common ownership, the brand headquarters and its hotels are more likely to share a similar organizational culture. This similarity in organizational culture results in the channel entities' sharing a more consistent set of norms and values. Through this common set of norms and values, the hotels' objectives become more closely aligned with those of the brand headquarters, and thus the hotels' incentives to behave opportunistically are reduced. To act with opportunism would subvert their own goal achievements.

These two characteristics of brand headquarters' hotel ownership lead to the same result: lowered hotel opportunism. Therefore, we believe that

H₁: The hotel's opportunism will be reduced if brand headquarters has full ownership of the hotel, as compared with situations in which the hotel is independently owned.²

TSAs

Transaction-specific assets are those assets that have little or no value outside the focal exchange relationship (Lohtia, Brooks, and Krapfel 1994, p. 265; Williamson 1985, p. 55). Transaction-specific assets include specialized equipment and facilities as well as specialized training and experience (Anderson and Weitz 1986). For example, in their channel relationships, hotels sometimes invest in specialized physical assets (e.g., furnishings, fixtures, supplies, signs) as well as idiosyncratic intangible assets (e.g., information systems, reservations systems, management procedures), which cannot be transferred easily to another chain.

Organizations invest in TSAs for at least three reasons. The first reason is that TSAs are more efficient and effective than generalized assets. For example, by investing in idiosyncratic physical assets (e.g., signs, computer equipment, software) as well as idiosyncratic human assets (e.g., specialized training), hotels can generate greater demand and realize lower costs than they can by using more generalized assets. The second reason firms invest in TSAs is to signal their honorable intentions with respect to their trading relationship (Mishra, Heide, and Cort 1998). In other words, firms

invest their own resources to ensure their continued participation in the relationship. In doing so, trade partners demonstrate that they can reliably count on one another to perform the functions essential to the relationship, that

particular memberships in the relationship will continue, that conflicts will be resolved, and that they will abide by "supracontract norms" guaranteeing the rights of both parties. (Buchanan 1992, p. 67)

The third reason is that such investments may be required as a condition of exchange, beyond effectiveness and efficiency reasons. Transaction-specific asset investments can be required as performance bonds to be forfeited if the firm is detected as behaving opportunistically.

Common to all three motives for investing in TSAs, but explicit in the performance bonding motive, is the potential for economic loss. Thus, regardless of its motives for investing in TSAs, a firm can lose the TSAs' full value (e.g., the value of a franchisee's building constructed on land leased from the franchisor), its nonsalvageable value (e.g., brand-specific knowledge that cannot be redeployed to other exchange relationships), and/or the future income stream generated by the TSAs (e.g., a hotel's traffic generated by its chain's reservation system) if the relationship is terminated (Rubin 1990). And because the firm's opportunistic behavior may be grounds for terminating the relationship, "engaging in opportunistic behavior and risking the dissolution of the relationship is contrary to the self-interest of the channel member that has made idiosyncratic investments" (Anderson and Weitz 1992, p. 21). In other words, the value of the TSA is substantially reduced if the relationship is terminated because of opportunism (Doney and Cannon 1997). Therefore, the risk of forfeiting these idiosyncratic investments restrains hotel malfeasance (Stump and Heide 1996), regardless of the hotel's motives for investing in TSAs. Consequently, we expect that

H₂: The hotel's opportunism will be reduced the more the hotel has invested in TSAs of its own.

Relational Exchange

Relationships among channel firms can be characterized by exchange norms such as role integrity, mutuality, solidarity, flexibility, bilateral information exchange, harmonious conflict resolution, and a long-term orientation (Dwyer, Schurr, and Oh 1987; Ganesan 1994; Kaufmann and Dant 1992; Kaufmann and Stern 1988; Macneil 1980). Relational exchange is indicative of those channels in which the norms of relationship preservation, role integrity, and harmonization of conflict are especially intensified (Macneil 1980, p. 65). These shared norms are characteristic of relational exchange, the final mechanism we investigate for managing opportunism in channels for lodging services.

Relationship preservation is the extent to which channel members (1) view their relationship as distinct from a series of discrete transactions, (2) consider the relationship important in and of itself, and (3) wish to preserve that relationship (Kaufmann and Stern 1988; Macneil 1980). *Role integrity* entails channel members' expectations for needed future roles (Macneil 1980) and suggests that roles expand to "cover a multitude of issues not directly related to any particular transaction" (Kaufmann and Stern 1988, p. 536). This contractual norm ensures the stability necessary for exchange relationships to deepen (Dant and Schul 1992, p. 43; Kaufmann and Dant 1992). The norm of *harmonization of*

²Firms can employ the ownership mechanism in two key ways: acquisition and expansion. With acquisition, a firm can bring more opportunistic units in-house, where they can be more closely monitored. In other words, the ownership mechanism can be implemented *ex post*. With expansion, the ownership mechanism is implemented *ex ante*. We do not explore this distinction further in this research.

relational conflict refers to the extent to which channel members achieve mutually satisfying resolution of their conflicts (Macneil 1980). Because exchange norms are indicative of a higher-order construct dubbed "relationalism" (Heide and John 1992; Noordewier, John, and Nevin 1990), we view the extent of relational exchange in a marketing channel as the degree to which the norms of role integrity, preservation of the relationship, and harmonization of relational conflict characterize that channel.

Relational exchange limits opportunism through the sharing of norms and values. With the relationship preservation norm, the exchange partners consider the relationship ongoing and mutually beneficial and therefore will refrain from any behaviors that might jeopardize it. Role integrity refers to a clear understanding of mutual expectations that often go beyond the buying and selling of products. This may include mutual expectations about the proactive sharing of information, multilevel interactions between the firms, mutual coordination, and conscientious and honest dealings with each other. Thus, opportunistic behaviors violate the integrity of the channel roles to which conscientious firms subscribe; that is, firms that behave opportunistically do not fulfill their channel roles. Firms that do fulfill their roles do not behave opportunistically. Therefore, the role integrity norm inhibits opportunism. Finally, firms that share the harmonization of conflict norm will attempt to resolve their disagreements in mutually satisfying ways. They are also more likely to engage in other behaviors that are mutually satisfying, including refraining from opportunism.

In summary, the norms engendered in relational exchange provide another way that channel members safeguard themselves from opportunistic behavior (Ganesan 1994; Goldberg 1980; Heide and John 1990; Joskow 1987). Relational norms "guide and regulate the standards of trade and conduct" (Gundlach, Achrol, and Mentzer 1995, p. 81) and, as empirically found by Gundlach, Achrol, and Mentzer, safeguard against opportunistic behaviors (Heide and John 1992).

On the basis of these arguments, we hypothesize the following:

- H₃. The hotel's opportunism will be reduced the more the hotel perceives a relational exchange with its brand headquarters.

Simultaneous Use of Governance Mechanisms

Governance mechanisms are often used simultaneously to take advantage of their differential impacts (Bradach 1997; Weitz and Jap 1995). Multiple forms of governance "create built-in constructive tension to keep the organization receptive to new influences, yet in control" (Bradach 1997, p. 301). Indeed, to govern complex exchanges in the hotel industry, ownership, TSA investments, and relational exchange may be used simultaneously (see Nevin 1995, p. 329).

Through ownership, brand headquarters can develop a system of rewards and punishments implemented by more extensive monitoring of behavior and outcomes to limit hotel opportunism. In addition, ownership provides brand headquarters with the opportunity to develop an organiza-

tional culture that eschews opportunism by all the firm's units, including its hotels. Hotel investment in idiosyncratic assets, in contrast, curbs hotel opportunism through the risk of forfeiture—of the relationship itself, the assets themselves, or a part of the hotel's future income stream. This risk of forfeiture represents a potential sanction that hangs over the relationship.

When the hotel is fully owned by brand headquarters and is not operated as an autonomous unit, the hotel's TSAs are investments that brand headquarters makes in the hotel. Therefore, achieving efficiency and effectiveness, rather than governing the hotel's activities, appears to be the primary motive for the brand headquarters' investments in these brand-specific assets. Therefore, idiosyncratic investments made on behalf of the hotel to support the brand seem to have limited usefulness in governing the hotel's activities.

However, the hotel's TSAs may be effective in limiting a company-owned hotel's opportunistic behavior. These investments are made to generate greater returns than are attainable from more generalized assets. If the hotel is producing satisfactory returns on these investments, brand headquarters may allow the hotel's management to reinvest those earnings in the hotel. In contrast, brand headquarters has the power to tax those returns if it perceives the hotel's management as behaving opportunistically. In other words, brand headquarters may sanction the hotel by recovering all or part of the earnings generated by the hotel. Note that brand headquarters could tax the hotel for reasons other than opportunism. For example, brand headquarters may consider the particular hotel property a cash cow that subsidizes the firm's other properties. Regardless, taxing the earnings generated by the hotel (including its brand-specific assets) is one way brand headquarters can sanction opportunistic behavior.

Given these arguments, we believe that the combination of hotel investment in TSAs and ownership is likely to be a potent governance combination. The sanctions inherent in TSA governance reinforce and supplement the rewards and punishments of ownership. Indeed, opportunistic behavior does not altogether disappear with common ownership, because it is impossible to align completely the interests of the individual managers with the firm (Williamson 1975, pp. 125–26). Thus, TSA governance may fill any governance gaps that ownership alone cannot address. In addition, the common norms and values that can be developed through ownership governance can fill governance gaps that exist when TSA governance is relied on solely. Thus, opportunism can be mitigated effectively by this combination that employs rewards, sanctions, and common values and norms. Therefore, we expect that

- H₄: The hotel's opportunism will be reduced when it is owned by brand headquarters and makes increasing investments in TSAs.

The hallmark of relational exchange is channel members' shared norms and values. These shared norms and values assure each party that the other will not behave opportunistically (see Bradach and Eccles 1989). Developing relational exchange is not cost free; it takes time and effort. However, when developed, relational exchange reduces the

need for more elaborate safeguards (see Chiles and McMackin 1996). Thus, relational exchange enables firms to use less formal governance mechanisms and thereby reduce overall transaction costs (i.e., losses due to opportunism plus the costs of governance).

In addition to substituting for other mechanisms of governance, we expect relational exchange to intensify the effectiveness of other safeguards. For example, Palay (1984) finds that mutuality of interests (i.e., relational exchange) reinforces and enhances the effectiveness of the ownership governance mechanism in exchanges between shippers and rail carriers. This synergy between relational exchange and ownership is obtained as follows.

As noted previously, ownership does not guarantee that the firm's managers will share in company-wide goals and objectives. One reason is that the firm's culture may promote arm's-length transactions among its organizational units, which leads those units to attempt to advance their own interests, possibly at the expense of the firm's overall objectives. However, mutual knowledge and shared values can be developed by promoting norms of relational exchange among the firm's organizational units. For example, the relationship preservation norm shifts the unit's focus to the relationship as a whole rather than to its own narrow interests. As argued previously, this broader perspective inhibits opportunistic behavior. The norms of role integrity and conflict harmonization operate similarly. They elevate the interests of the relationship above those of the individual exchange partners. This subordination of individual interests leads firms to avoid opportunistic behavior. Thus, relational exchange can build common norms and values when common ownership does not encourage this, such as when a firm's vertical units are operated as individual profit centers.

Furthermore, relational exchange can offset the sanctions inherent in ownership. For example, the relational exchange norm of conflict harmonization attempts to resolve disagreements to the mutual satisfaction of both exchange partners. This relational exchange norm is less likely to produce reactive opportunism than is the use of fiat, an inherent right of ownership, to resolve conflict. Moreover, relational exchange can help cut through bureaucratic barriers within the vertically integrated organization, thereby facilitating the operation of the hotel-brand headquarters relationship.

Relational exchange and ownership used together better mesh the hotel's interests with those of its brand headquarters and facilitate exchange between them. The greater the commonality of these units' interests and the more easily transactions can take place between them, the less likely the hotel will behave opportunistically. Therefore, we believe that

H₅: The hotel's opportunism will be reduced when the hotel is owned by brand headquarters and perceives an increasing level of relational exchange.

As noted previously, hotel investments in TSAs represent potential sanctions that hang over the relationship between brand headquarters and its hotels. This provides the hotels with an incentive not to behave opportunistically. Relational exchange, in contrast, emphasizes the building and sustaining of the brand headquarters-hotel relationship

through behavioral norms rather than potential sanctions. Thus, relational exchange is a more positive form of governance. When used jointly, relational exchange enhances the effectiveness of TSA governance mechanisms by focusing on the benefits of the relationship rather than the potential damage to it from opportunism. Alternatively, TSA governance heightens the potency of relational exchange by providing a "stick" that reinforces the latter's "carrot" approach to governance. Therefore, we believe that

H₆: The hotel's opportunism will be reduced the more the hotel has invested in TSAs of its own and perceives higher levels of relational exchange.

We expect that all three governance mechanisms—ownership, TSA investments, and relational exchange—used in conjunction will reduce hotel opportunism. Ownership inhibits opportunism through (1) the rewards and sanctions inherent in ownership and (2) the shared norms and values developed through common ownership. Hotel investment in TSAs limits opportunism to the extent that the hotel's managers do not want to risk losing that investment or jeopardizing the relationship itself. Finally, the shared norms and values of relational exchange restrain opportunism.

All three governance mechanisms together supplement and reinforce one another. Ownership and TSA investments can limit opportunism through the threat of sanctions. Ownership and relational exchange can restrain opportunism through shared norms and values. Relational exchange and TSA investments can limit opportunism through voluntary actions, the former to preserve the relationship and the latter to preserve the idiosyncratic investments. Ownership can offer rewards for the appropriate behaviors. Therefore, we expect that

H₇: The hotel's opportunistic behavior will be reduced the more that ownership, TSA investment, and relational exchange are used jointly to govern the brand headquarters-hotel relationship.

Method

The Sample

We test these seven hypotheses in the context of vertical relationships within the hotel industry. In particular, we focus on the dyadic channel relationship between the hotel and its brand headquarters. The unit of analysis in our study is the relationship between two hotel companies (i.e., the brand headquarters) and their individual hotel properties (i.e., the hotels themselves) in North America. We selected these two companies because each uses both company-owned properties and franchised units, which provides some variance along the ownership dimension for both firms. In addition, because these are two of the larger hotel chains operating in North America, we expected them to provide large enough numbers of both types of hotels for a meaningful test of the hypotheses.

To gather the data necessary for testing the hypotheses, we conducted a mail survey of individual hotel general managers. Through extensive pretesting, we determined that the hotel's general manager was the most competent and quali-

fied person in the hotel to report on the hotel's relationship with its brand headquarters. Names of general managers and their hotel addresses were provided by the two hotel companies. The questionnaire was sent to each general manager along with a business reply envelope for returning it.

To increase the survey response rate, several steps were undertaken. First, a cover letter supporting the research from the hotel company's chief operating officer was included with each questionnaire. Second, the participants were assured that all responses were confidential and that only aggregate results would be presented. Third, each participant in the survey was offered an executive summary of the study as an inducement to participate. Finally, follow-up letters were sent to participants who did not respond during the four weeks after the initial mailing.

The questionnaire was sent to 1736 hotel general managers (one per hotel). After adjusting for undeliverable mail and hotels that switched brand affiliation, 1650 eligible sample elements remained. Completed responses were received from 395 general managers (a 23.9% response rate).

We used several steps to check for nonresponse bias in our sample. First, using a systematic sampling of the original sampling frame, we placed telephone calls to 50 nonresponding hotel general managers. Each of these nonrespondents was asked a series of organizational demographic questions as well as a random selection of items from the original questionnaire covering each facet of the study. No significant differences on these questions ($p > .10$) were found between the original respondents and our sample of 50 nonresponding managers. Second, the nonresponding hotel sample profile closely matched the company-wide profiles provided by the two brands' headquarters. Finally, the timing of the original responses was analyzed as a potential source of nonresponse bias (Armstrong and Overton 1977). No significant differences in the variable means between early responders and late responders were detected. On the basis of all of this evidence, we concluded that nonresponse did not appear to be a problem with the overall hotel sample.

Measurement

We measured our constructs using a structured questionnaire. To ensure the content validity of the measures, we thoroughly reviewed the relevant academic and practitioner literature to guide our questionnaire development. In addition, we conducted an extensive pretest with more than 30 hotel general managers who were enrolled in a university executive development program. Through debriefing these pretest informants, we were able to refine our questionnaire. As an additional step in developing our measures, senior managers in both hotel chains reviewed these questionnaires to ensure their relevance. Each measure is described next.³

Opportunism. Opportunism refers to self-interest seeking with guile; therefore, any measure of that construct must reflect not only self-interest seeking but guile as well. We adapted ten items developed by previous researchers in in-

vestigations of opportunism (e.g., Anderson 1988; Dwyer and Oh 1987; John 1984; Provan and Skinner 1989). Hotel general managers rated each item, reflecting the extent to which the hotel engaged in opportunism with respect to its brand headquarters, on a seven-point Likert-type scale.

TSAs. As noted previously, TSAs are those assets that are devoted to the channel relationship and have little value outside that relationship. In the hotel industry, TSAs are primarily intangible (e.g., time and effort developing a customer base for the brand, systems and procedures tailored to the brand). For the most part, tangible assets (e.g., furnishings, fixtures, equipment, supplies) can be used in other channel relationships and therefore are not transaction specific (notable exceptions are signs and nondurables, such as pens and stationery). For this reason, our measures of TSAs center on intangible assets. On the basis of previous research (Heide and John 1988, 1990; Klein, Frazier, and Roth 1990), we developed six seven-point Likert-type items to measure the hotel's investment in idiosyncratic assets.

Relational exchange. As noted previously, we viewed this construct as reflected by preservation of the relationship, role integrity, and harmonization of conflict. Although not exhaustive, these are three key facets of the syndrome of relational exchange (Boyle et al. 1992). Accordingly, hotel general managers were asked to rate 15, seven-point Likert-type items based on those developed by Kaufmann and Dant (1992) for measuring these three aspects of channel relationships.

To evaluate the adequacy of these multi-item measures, we conducted a confirmatory factor analysis, hypothesizing that three factors (HOPPRT, hotel opportunism; HTSA, hotel investment in TSAs; and HRELATE, relational exchange) would adequately fit the data. After deleting items with negative loadings as well as excessively high standardized residuals (i.e., $> |2.58|$; see Jöreskog and Sörbom 1989, p. 32), we found that a three-factor measurement model fit the data acceptably. The chi-square goodness of fit ($\chi^2_{(167)} = 360.95$; $p < .01$) was statistically significant, which indicates that the model was significantly different from the data. However, because large samples are likely to lead the chi-square statistic to reject valid models (Bagozzi and Yi 1988, pp. 77–78), we relied more heavily on the goodness-of-fit index (GFI) and the comparative fit index (CFI), as well as the nonnormed (NNFI) and the normed (NFI) incremental fit indices. All of these indices (.91, .95, .95, and .92, respectively) exceeded the usual .90 rule of thumb for adequate model fit.

All factor loadings were statistically significant and roughly equal in magnitude. The composite reliability coefficient for each of these three multi-item constructs exceeded the .60 threshold necessary for measurement reliability (Bagozzi and Yi 1988, p. 80). In addition, the average variance extracted for each construct surpassed the .50 threshold for adequate fit (Bagozzi and Yi 1988, p. 80). The largest between-factor correlation was .45, which was significantly less than unity; this finding provides evidence of the discriminant validity of these measures (Phillips 1981). All these tests, summarized in Table 1, give us confidence that behavioral measures are indeed reliable, unidimensional, and valid.

³A complete listing of the questionnaire items that constitute the multiple-item scales are available to interested readers from the authors on request.

TABLE 1
Across-Construct Measurement Validity Assessment

Construct	Number of Items		Construct Reliability	Average Variance Extracted
	Original	In Final Scale		
Hotel opportunism (HOPPRT)	10	5	.857	.550
TSAs, hotel (HTSA)	6	4	.835	.563
Relational exchange, hotel's perspective (HRELATE)	15	11	.925	.522

Φ Matrix	1	2	3
1. HOPPRT	1.000		
2. HTSA	-.019	1.000	
3. HRELATE	-.449*	.454*	1.000

Goodness-of-Fit Statistics	
$\chi^2 = 360.948$	Adjusted GFI = .884
d.f. = 167	CFI = .953
$p = .000$	NNFI = .946
GFI = .907	NFI = .916

* $p \leq .01$.

Ownership. One formal governance mechanism used in marketing channels for lodging services is ownership. In this study, we asked each hotel's general manager to indicate on a nominal scale whether the hotel was 100% chain (i.e., brand headquarters) owned, mostly chain owned with an independent minority owner, mostly independently owned with a chain minority owner, or 100% independently owned. Because of the small numbers in the partial ownership categories, we eliminated those responses so that our analysis included only hotels that were either 100% chain owned or 100% independently owned. This resulted in a group of 39 hotels that were fully owned by brand headquarters. We coded this group 1. The remaining 329 hotels were 100% independently owned and were coded 0. Thus, our measure of hotel ownership (OWNS) is a dummy variable, and the larger value represents hotels owned by the brand headquarters.

Compared with the complex behavioral constructs of this study, brand headquarters' ownership of the hotel is relatively simple. It consists of a single facet: whether or not brand headquarters holds a full equity position in the hotel. Unlike the behavioral constructs, the accuracy of the hotel general manager's response to this measure can be verified easily by archival records.⁴ For this reason, we used a single item to measure the ownership construct.

Control variables. To anticipate the possibility that other variables might account for a substantial amount of the variance in hotel opportunism, two control variables were included in the study. Because the sample consisted of hotels representing two different brands in the lodging industry, differences in the operation of these chains might affect the degree of relational norms and the level of opportunism they experience. For this reason, each hotel in the sample was dummy coded according to which chain it represented.

Thus, we had two dummy variables—labeled FIRM_A and FIRM_B—to represent the hotel chains under study.⁵

We also wanted to control for the size of the hotel, believing that larger hotels may experience different relationships with their brand headquarters than do smaller ones. Our measure of hotel size (TOTEMP) was the total number of employees (both part- and full-time) working for the hotel.

Analytical Procedure

Taken together, the hypotheses imply the following structural equation:

$$\begin{aligned}
 (1) \text{ HOPPRT} = & \\
 & (\text{Controls}) \quad b_0 + b_1 \text{ TOTEMP} + b_2 \text{ FIRM\_B} + \\
 & (H_1) \quad b_3 \text{ OWNS} + \\
 & (H_2) \quad b_4 \text{ HTSA} + \\
 & (H_3) \quad b_5 \text{ HRELATE} + \\
 & (H_4) \quad b_6 (\text{OWNS} \times \text{HTSA}) + \\
 & (H_5) \quad b_7 (\text{OWNS} \times \text{HRELATE}) + \\
 & (H_6) \quad b_8 (\text{HTSA} \times \text{HRELATE}) + \\
 & (H_7) \quad b_9 (\text{OWNS} \times \text{HTSA} \times \text{HRELATE}) + e
 \end{aligned}$$

Equation 1 contains several interaction terms that reflect the simultaneous effect of the governance mechanisms on that relationship.

We estimated Equation 1 using the moderated regression approach detailed by Jaccard, Turrissi, and Wan (1990) and Aiken and West (1991). An important concern in using this approach is the possible multicollinearity between the interaction terms and their components (Jaccard, Turrissi, and Wan 1990). To mitigate the problems of multicollinearity, each scale constituting an interaction term was mean centered (i.e., the mean of each scale was subtracted from each observation) (Aiken and West 1991). In other words, we mean-centered the HTSA and HRELATE scales. Then we

⁴Unfortunately, the resources required to conduct such a validation were beyond our means.

⁵To protect the confidentiality of the firms cooperating in this study, we have disguised the firm labels.

created the interaction terms by multiplying the relevant mean-centered scales. The OWNS variable was dummy coded (i.e., 0, 1) and therefore was not mean centered. Interaction terms incorporating OWNS were created by multiplying it by the relevant mean-centered scales. As a result of this mean-centering procedure, the largest zero-order correlation between the hypothesized predictors of Equation 1 was $r_{\text{OWNS} \times \text{HTSA}, \text{OWNS} \times \text{HRELATE}} = .392$ (see Table 2). This indicates that only 15.4% of the variance in these variables is shared, evidence that multicollinearity is not a major issue in this research.

Results

In Table 3, we report the results of using ordinary least squares moderated regression to estimate Equation 1. The estimated equation explains 13.7% of the variation in hotel opportunism, an amount significantly greater than zero (adjusted $R^2 = .116$; $F = 6.324$; d.f. = 9, 358; $p = .000$).

As noted previously, we believed that hotel opportunistic behavior might be affected by two control variables: the size of the hotel (TOTEMP) and its brand affiliation (FIRM_B). Table 3 shows that neither of these variables was statistically significant ($b_1 = -.000$, $p > .10$; $b_2 = -.159$, $p > .10$). Thus, hotel opportunistic behavior bears little relation to the size of the hotel or the brand with which it is affiliated.

Impact of Governance Mechanisms Used Singly

All the hypotheses focus on the relationship between hotel opportunism and the mechanisms used to govern the hotel-brand headquarters relationship. Because we include interaction terms to represent combinations of governance mechanisms, we must untangle these interaction effects. In other words, testing the hypotheses requires that the interaction effects be decomposed. This is done by differentiating Equation 1 with respect to each governance mechanism.

Equation 2 shows how changes in the hotel's opportunistic behavior vary according to whether the hotel is owned by its brand headquarters or is independently owned (see Jaccard, Turrisi, and Wan 1990):

$$(2) \quad \partial \text{HOPPRT} / \partial \text{OWNS} = b_3 + b_6 \text{HTSA} + b_7 \text{HRELATE} + b_9 (\text{HTSA} \times \text{HRELATE}).^{6,7}$$

We argue in H_1 that brand headquarters' equity in the hotel will limit the hotel's opportunistic behavior; therefore, we expect $\partial \text{HOPPRT} / \partial \text{OWNS}$ to be negative.

Because we are investigating the sole effect of equity ownership, we assume that HTSA and HRELATE operate at

low levels.⁸ These variables are mean centered; therefore, a value of zero for, say, HTSA represents the mean or moderate level of hotel investment in TSAs. Following the usual practice in decomposing interaction terms (Jaccard, Turrisi, and Wan 1990), we set the low levels of these variables at one standard deviation below their mean values (in a parallel fashion, high levels are set to +1 standard deviation). After making these substitutions, $\partial \text{HOPPRT} / \partial \text{OWNS}$ becomes $.070 - .021 (-1 \times 1.406) + .296 (-1 \times 1.015) + .174 (-1.406 \times -1.015)$, or $\partial \text{HOPPRT} / \partial \text{OWNS} = .047$.

Because OWNS is dummy coded, $\partial \text{HOPPRT} / \partial \text{OWNS}$ is interpreted in the same fashion as dummy variable regression coefficients are. Thus, when brand headquarters owns the hotel, the hotel is slightly more likely to behave opportunistically. We test the statistical significance of this estimate by first computing its standard error (see Jaccard, Turrisi, and Wan 1990) and then dividing each estimate by its standard error. These calculations result in the t-value used to test the statistical significance of the estimate derived previously.

We calculated the standard error for $\partial \text{HOPPRT} / \partial \text{OWNS}$ as .334; the corresponding t-value was .140 (see Table 4, Part A). This result indicates that, contrary to H_1 , brand headquarters' ownership of the hotel has no significant impact on hotel opportunism. Note that we assumed low levels of hotel TSAs and relational exchange.

In H_2 we argue that the more the hotel has invested in TSAs of its own, the less likely it will engage in opportunistic behavior. We followed a procedure for testing this hypothesis similar to the one for evaluating H_1 . To observe the solo effect of HTSA as a governance mechanism, we assumed that the hotel would be independently owned (i.e., OWNS = 0) and that the extent of relational exchange between the hotel and its headquarters was minimal (i.e., HRELATE = $-1 \times$ its standard deviation = -1.015). As reported in Table 4, Part A, this analysis shows that $\partial \text{HOPPRT} / \partial \text{HTSA} = .188$ and is statistically significant ($p < .01$). This implies that the more the hotel has invested in TSAs, the more it will behave opportunistically. In other words, the hotel's idiosyncratic assets exacerbate its opportunistic behavior, which leads us to reject H_2 .

In contrast, the use of relational exchange as the sole governance mechanism mitigates the hotel's opportunistic behavior ($\partial \text{HOPPRT} / \partial \text{HRELATE} = -.315$, $p < .01$) (see Table 4, Part A). Note that we arrived at this conclusion by assuming independent hotel ownership and low levels of hotel investment in idiosyncratic assets. These results are consistent with our prediction in H_3 .

⁶The effects of TSA investments and relational exchange on the hotel's opportunistic behavior were derived similarly.

⁷In concurrence with Jaccard, Turrisi, and Wan (1990, p. 41), Aiken and West (1991, p. 105) argue that "In cases in which there are [sic] strong theoretical grounds for expecting an interaction, the interaction, even if nonsignificant, should be retained in the final regression equation." Because we offered strong theoretical reasons for including each of the terms in Equation 1, we retained all the estimated coefficients of Equation 1, regardless of their statistical significance, in making our decompositions.

⁸With mean centering, "main effects" or "first-order effects," as Aiken and West (1991, p. 38) term them, represent the conditional effects of an interaction component (e.g., OWNS) on the dependent variable (e.g., HOPPRT), given specific values of the other interaction components (e.g., HTSA, HRELATE) (Jaccard, Turrisi, and Wan 1990, p. 26). In contrast, main effects with uncentered data "are most typically defined as the constant effect of one variable across all values of another variable" (Aiken and West 1991, p. 38). Therefore, the first-order effects have substantive meaning, even though one of the interaction terms is statistically significant.

TABLE 2
Variable Intercorrelations, Means, and Standard Deviations*

Variable	1	2	3	4	5	6	7	8	9	10
1. HOPPRT	1.000									
2. OWNS	.035	1.000								
3. HTSA	-.021	.056	1.000							
4. HRELATE	-.316	.055	.359	1.000						
5. OWNS × HTSA	.008	.208	.246	.132	1.000					
6. OWNS × HRELATE	-.043	.145	.097	.334	.392	1.000				
7. HTSA × HRELATE	-.012	-.018	.110	-.237	-.020	-.097	1.000			
8. OWNS × HTSA × HRELATE	.052	.288	.003	-.087	.007	-.267	.276	1.000		
9. TOTEMP	-.051	.173	.037	.056	.039	.113	.059	.028	1.000	
10. FIRM_B	-.040	.070	-.130	-.129	.080	-.004	.136	.101	.476	1.000
Mean	2.232	.106	4.315	5.413	.025	.017	.511	.046	148.361	.223
Standard Deviation	1.051	.308	1.406	1.015	.344	.338	1.509	.463	149.741	.417

*n = 368.

TABLE 3
The Impact of Governance Mechanisms on Hotel Opportunism: Equation 1 Regression Estimates*

Parameter	Variable	Parameter Estimate		Standard Error	t-Value	One-Tailed p
		Unstandardized	Standardized			
b ₀	Intercept term	2.304	.000	.075	30.716	.000
b ₁	TOTEMP	-.000	-.011	.000	-.193	.424
b ₂	FIRM_B	-.159	-.063	.147	-1.085	.139
b ₃	OWNS	.070	.021	.185	.379	.352
b ₄	HTSA	.097	.130	.042	2.294	.011
b ₅	HRELATE	-.441	-.426	.061	-7.284	.000
b ₆	OWNS × HTSA	-.021	-.007	.173	-.120	.452
b ₇	OWNS × HRELATE	.296	.095	.187	1.583	.057
b ₈	HTSA × HRELATE	-.090	-.129	.038	-2.365	.009
b ₉	OWNS × HTSA × HRELATE	.174	.076	.129	1.342	.090

*R² = .137; F = 6.324; d.f. = 9358; p < .01.

Impact of Governance Mechanisms Used Simultaneously: Transaction Cost Analysis Perspective

In examining the simultaneous impact of the three governance mechanisms, we follow the original premise of transaction cost analysis in assuming that ownership is the key governance alternative to the discipline of the marketplace (Rindfleisch and Heide 1997; Williamson 1975). Accordingly, we test H₄, H₅, and H₇ by substituting values for HTSA and HRELATE in Equation 2; in other words, we assume that HTSA and HRELATE moderate the impact of OWNS on HOPPORT. Because the use of TSAs as a governance mechanism is also rooted in transaction cost analysis, though later than ownership (Rindfleisch and Heide 1997; Williamson 1985, 1996), we assume that HRELATE moderates the linkage between HTSA and HOPPORT.

In H₄ we argue that the hotel's investment in TSAs coupled with headquarters' ownership of the hotel will reduce hotel opportunism. Recall that when the level of hotel TSA investment (as well as relational exchange) was low, $\partial\text{HOPPORT}/\partial\text{OWNS} = .047$. Table 4, Part B, indicates that if the hotel has made a moderate level of transaction-specific investments, its opportunistic behavior decreases, albeit not significantly, with brand headquarters' ownership of the hotel ($\partial\text{HOPPORT}/\partial\text{OWNS} = -.230$, $p > .10$). Note that the level of relational exchange between the hotel and its brand headquarters has been held constant at a low level (i.e., $-1 \times$ its standard deviation = -1.406). With a high level of TSA investment, the hotel's opportunistic behavior decreases with headquarters' ownership ($\partial\text{HOPPORT}/\partial\text{OWNS} = -.507$) but, again, not to a significant degree ($p > .10$). These results do not support H₄.

Following Aiken and West (1991, pp. 19–21), we compared these effects statistically. We found that increasing the hotel's idiosyncratic investments from low to moderate levels (.047 versus $-.230$) significantly ($p < .10$) boosts the efficacy of headquarters' ownership in limiting hotel opportunism. This efficacy can be further enhanced by raising the level of hotel TSA investment from moderate to high ($-.230$ versus $-.507$); this increase is statistically significant at the .01 level. Thus, hotel idiosyncratic investments significant-

ly enhance the effectiveness of headquarters' ownership of the hotel in limiting hotel opportunism. However, this result is tempered by the finding that the combination of these two governance mechanisms does not significantly mitigate hotel opportunism.

We argue in H₅ that higher degrees of relational exchange will intensify the impact of headquarters' ownership of the hotel in lessening the hotel's opportunistic behavior. To evaluate this hypothesis, we held the hotel's idiosyncratic investment constant at a low level (i.e., $\text{HTSA} = -1 \times 1.406$). The coefficient for brand headquarters' ownership of the hotel, given a moderate level of relational exchange ($\partial\text{HOPPORT}/\partial\text{OWNS}$), is .099 ($p > .10$). That same coefficient for a high level of relational exchange ($\partial\text{HOPPORT}/\partial\text{OWNS}$) is .152 ($p > .10$). Thus, increasing levels of relational exchange tend to heighten (.047 versus .099 versus .152), but not significantly, the exacerbating effect of brand headquarters' ownership on hotel opportunism (Table 4, Part B). Note that the differences among these effects are themselves not statistically significant. For these reasons, we reject H₅.

H₆ states that the hotel will lessen its opportunistic behavior the more it has made idiosyncratic investments and the more it perceives relational exchange with its brand headquarters. Here we assume the hotel is independently owned. Table 4, Part B, shows that with low levels of relational exchange, $\partial\text{HOPPORT}/\partial\text{HTSA} = .188$ ($p < .01$). With moderate levels of relational exchange, $\partial\text{HOPPORT}/\partial\text{HTSA} = .097$ ($p < .05$), and $\partial\text{HOPPORT}/\partial\text{HTSA} = .006$ ($p > .10$) with high levels of relational exchange. A statistical comparison of these effects indicates that increasing levels of relational exchange significantly ($p < .01$) weaken the positive impact of hotel TSA investment on hotel opportunism. Although this result is consistent with the spirit of H₆, the positive coefficients for $\partial\text{HOPPORT}/\partial\text{HTSA}$ regardless of the level of relational exchange compel us to reject the hypothesis.

Finally, we argue in H₇ that hotel opportunism will be lower when the hotel has made more TSA investments, when the hotel perceives more relational exchange with its headquarters, and when headquarters owns the hotel. Table 4, Part B, shows that for low levels of both hotel TSA in-

TABLE 4
Impact of Governance Mechanisms on Hotel Opportunistic Behavior

Governance Mechanism	Estimated Impact on Hotel Opportunism	Standard Error	t-Value
A: First-Order Effects			
•H ₁ : Brand headquarters' ownership of hotel	.047 ^a	.334	.140
•H ₂ : Hotel investment in TSAs	.188	.064	2.954 ^b
•H ₃ : Relational exchange between hotel and its brand headquarters	-.315	.068	-4.609 ^b
B: Transaction Cost Perspective			
•H ₄ : Effect of brand headquarters' ownership of hotel given various levels of hotel investment in TSAs (assuming a low level of relational exchange between hotel and its brand headquarters)			
>Low HTSA	.047	.334	.140
>Moderate HTSA	-.230	.285	-.807
>High HTSA	-.507	.502	-1.011
•H ₅ : Effect of brand headquarters' ownership of hotel given various levels of relational exchange between hotel and its brand headquarters (assuming a low level of hotel investment in TSAs)			
>Low HRELATE	.047	.334	.140
>Moderate HRELATE	.099	.323	.307
>High HRELATE	.152	.439	.346
•H ₆ : Effect of hotel investment in TSAs given various levels of relational exchange between hotel and its brand headquarters (assuming independent ownership of the hotel)			
>Low HRELATE	.188	.064	2.954 ^b
>Moderate HRELATE	.097	.042	2.294 ^c
>High HRELATE	.006	.050	.113
•H ₇ : Effect of brand headquarters' ownership of hotel given various levels of hotel investment in TSAs and relational exchange between hotel and its brand headquarters			
>Low HTSA and HRELATE	.047	.334	.140
>Moderate HTSA and HRELATE	.070	.185	.379
>High HTSA and HRELATE	.589	.313	1.883 ^c
C: Relational Exchange Perspective			
•H ₅ : Effect of relational exchange between hotel and its brand headquarters given various levels of brand headquarters' ownership of hotel (assuming a low level of hotel investment in TSAs)			
>Low OWNS (i.e., independent hotel)	-.315	.068	-4.609 ^b
>High OWNS (i.e., hotel owned by headquarters)	-.263	.205	-1.284 ^d
•H ₆ : Effect of relational exchange between hotel and its brand headquarters given various levels of hotel investment in TSAs (assuming independent ownership of hotel)			
>Low HTSA	-.315	.068	-4.609 ^b
>Moderate HTSA	-.441	.061	-7.284 ^a
>High HTSA	-.568	.091	-6.203 ^b
•H ₇ : Effect of relational exchange between hotel and its brand headquarters given various levels of hotel investment in TSAs and brand headquarters' ownership of hotel			
>Low HTSA and OWNS	-.315	.068	-4.609 ^b
>High HTSA and OWNS	-.028	.286	.462

^aThis estimate was derived from Equation 2; all other estimates were derived similarly

^b $p \leq .01$.

^c $p \leq .05$.

^d $p \leq .10$.

vestments and relational exchange, $\partial\text{HOPPRT}/\partial\text{OWNS} = .047$ ($p > .10$). When both are at moderate levels, $\partial\text{HOPPRT}/\partial\text{OWNS}$ becomes $.070$ ($p > .10$), and it becomes $.589$ ($p < .05$) when they are both at high levels. Increasing both hotel TSA investment and relational exchange from low to moderate levels (.047 versus .070) has no significant ($p > .10$) impact on the effectiveness of brand headquarters' ownership in limiting hotel opportunism. In contrast, increasing both hotel TSA investment and relational exchange from moderate to high levels (.070 versus .589) does have a significant ($p > .01$) impact on the efficacy of the ownership governance mechanism; it exacerbates rather than mitigates hotel opportunism. This result is not consistent with H_7 .

Impact of Governance Mechanisms Used Simultaneously: Relational Exchange Perspective

In regression analysis with interaction terms, the choice of the moderator variable is based on theoretical rather than statistical considerations (Jaccard, Turrissi, and Wan 1990). Because transaction cost analysis has played a major role in the study of marketing channel governance (Rindfleisch and Heide 1997), we focused on the role of relational exchanging in moderating the effects of transaction cost governance mechanisms (i.e., ownership and idiosyncratic investments) on opportunistic behavior. In this section, we take an alternative perspective by examining how transaction cost governance mechanisms moderate the impact of relational exchange on hotel opportunism. The basic regression results of Table 3 do not change; however, instead of focusing on $\partial\text{HOPPRT}/\partial\text{OWNS}$ or $\partial\text{HOPPRT}/\partial\text{HTSA}$, we now emphasize $\partial\text{HOPPRT}/\partial\text{HRELATE}$. Note that H_5 , H_6 , and H_7 remain the same even though our perspective has changed.

For H_5 , the coefficient reported in Table 4, Part C, for relational exchange, given brand headquarters' ownership of the hotel, is statistically significant ($\partial\text{HOPPRT}/\partial\text{HRELATE} = -.263$, $p \leq .10$). Note that here we are assuming the hotel's TSA investment is held constant at a low level (i.e., $\text{HTSA} = -1 \times \text{its standard deviation} = -1.406$). This finding supports H_5 . However, as the hotel moves from independent to headquarters' ownership, the negative effect of relational exchange on hotel opportunism weakens ($-.315$ versus $-.263$), but not to a significant ($p > .10$) degree.

Assuming independent hotel ownership, Table 4, Part C, shows that $\partial\text{HOPPRT}/\partial\text{HRELATE}$ becomes more negative as the hotel's TSA investment rises from low ($-.315$, $p < .01$) to moderate ($-.441$, $p < .01$) to high ($-.568$, $p < .01$) levels. These results are consistent with H_6 . Furthermore, the differences among these effects are statistically significant ($p < .01$), which suggests that increasing levels of idiosyncratic investments strengthen the efficacy of relational exchange in limiting hotel opportunism.

Finally, Table 4, Part C, shows that the ability of relational exchange to mitigate the hotel's opportunism is weakened when the hotel moves from independent ownership with a low level of TSA investment ($-.315$, $p \leq .10$) to brand headquarters' ownership with a high TSA investment ($-.028$, $p > .10$). This finding shows that high levels of all three governance mechanisms do not significantly affect hotel opportunism. Therefore, we cannot support our predic-

tion in H_7 with this result. Note that the erosion of the efficacy of relational exchange with increased levels of ownership and TSA investment is statistically significant ($p < .10$).

Ostensibly, our investigation of the impact of the simultaneous use of these governance mechanisms produced contradictory findings. Some of our results supported the hypotheses, whereas others did not. Although the transaction cost analysis perspective tended not to support the hypotheses, the relational exchange perspective did. When relational exchange is emphasized (either singly or in combination with idiosyncratic investments), hotel opportunism decreases. When either ownership or TSA investments are stressed, hotel opportunism increases. We explore possible reasons for these results in the following section.

Discussion

The overall objective of this research was to investigate the efficacy of three mechanisms for managing opportunism in hotel marketing channels. In particular, we were interested in determining how a hotel's opportunism toward its brand headquarters could be limited by using three governance mechanisms: (1) brand headquarters' ownership of the hotel, (2) the hotel's investment in assets specific to its relationship with its brand headquarters, and (3) the development of norms and values shared by both the headquarters and its hotel (i.e., relational exchange). We studied the efficacy of these three mechanisms for limiting hotel opportunism both singly and in combination. Our findings have implications for both managers and researchers.

Managerial Implications

This research shows that managers should focus their efforts on building effective relational exchange with their channel partners. Only this governance mechanism by itself and in combination with the other governance mechanisms effectively limited hotel opportunism in our sample. Indeed, there is a synergistic effect when relational exchange is coupled with the hotel's investment in idiosyncratic assets. All three governance mechanisms used at once, with the focus on relational exchange, depress hotel opportunism, but not to a statistically significant degree.

In contrast, ownership used singly has no significant impact on hotel opportunism. It slightly weakened the effectiveness of relational exchange in limiting hotel opportunism. Moreover, when ownership is emphasized, the combination of ownership, hotel TSA investment, and relational exchange increases rather than limits hotel opportunism. Similarly, a hotel's TSA investment increases hotel opportunism when used singly. In combination with ownership or when emphasized with relational exchange, it has no significant impact on hotel opportunism.

These results suggest that if brand headquarters aggressively exerts its rights of ownership, especially when the levels of hotel TSA investment and relational exchange are high, it will exacerbate rather than limit opportunism. The reason is that ownership sanctions may "compromise an individual's proclivity to behave honestly" (Moschandreas 1997, p. 47), producing the very behavior they were intended to discourage. In other words, the existence of these sanc-

tions may provoke the hotel's general managers to exert their independence (i.e., engaging in psychological reactance) (see Churchill, Ford, and Walker 1985). This can lead hotel management to engage in opportunistic behaviors, such as concealing important information or communicating invalid information (Ghoshal and Moran 1996; Ramaswami 1996). Similarly, if potential forfeiture is overemphasized when a hotel has invested in idiosyncratic assets, psychological reactance may again explain increased hotel opportunism, even though such behavior (if detected) is counter to the hotel's best interests. Finally, the extrinsic rewards available through ownership may crowd out the hotel's intrinsic motivation, especially if norms of relational exchange are prevalent (see Frey 1993, p. 666). This may shift the hotel's perspective of its brand headquarters from a relational orientation to a more calculative one, making opportunism more likely if the hotel sees an advantage in behaving with guile.

In contrast, the emphasis of relational exchange is on building common norms and values. This process leads to a sense of identification between the hotel and its brand headquarters—whatever harms brand headquarters damages the hotel, and vice versa. In other words, effective relational exchange builds commitment to the relationship, which in turn leads to less opportunistic behavior (Gundlach, Achrol, and Mentzer 1995). This effect persists even when relational exchange is used in conjunction with ownership or hotel TSA investment. The key, however, is that managers should emphasize relational exchange more than either ownership or hotel idiosyncratic investment in their approach to governance.

These results demonstrate that managerial emphasis is crucial for limiting hotel opportunism. When the emphasis is on building strong relationships, hotel opportunism declines. When the emphasis is on either ownership or hotel TSA investments, hotel opportunism is unaffected at best or exacerbated at worst.

Research Implications

The finding that brand headquarters' ownership of the hotel does little to limit the hotel's opportunism is not consistent with transaction cost analysis. Apparently, other motives for company ownership are more salient here (e.g., potential scale economies, capturing the hotel's economic profits). In addition, ownership by itself does not appear potent enough in this context to offset any guileful self-interest seeking by hotel management.

The same can be said for investments in TSAs; indeed, by themselves, they seem to exacerbate hotel opportunism. Again, traditional economic arguments for these investments (i.e., they are made for efficiency and effectiveness reasons) appear to outweigh transaction cost arguments. One interpretation of the positive link between hotel TSA investment and hotel opportunism is that opportunistic behavior is one way the hotel can generate additional returns on these investments. Thus, in channels for lodging services, only when these governance mechanisms are coupled with relational exchange are they effective in reducing hotel opportunism. This suggests that motives other than governance drive the use of ownership and hotel investment in TSAs in

lodging channels; that is, governance is a secondary reason for using these mechanisms.

One possible explanation for this is the critical role played by the hotel in maintaining and reinforcing the brand's image. As was noted previously, brand headquarters' efforts to develop and promote a high-quality image can be undercut easily by a hotel's opportunistic behavior. In other words, the hotel can easily sabotage the brand if headquarters is too heavy handed in dealing with the hotel. Effective hotel chains seem to know this and strive to maintain good relations with their hotels. This is not only a desirable end but also an effective means for building brand equity. Thus, one possible explanation for these results is that the efficacy of various channel governance mechanisms depends on the role of the channel intermediary in differentiating the product/service (see Porter 1974). Further research is needed to determine whether this is indeed the case. More generally, because our sample was composed of company-owned and franchised hotels from two larger hotel firms, additional research is needed to test the boundaries of our findings.

Another possible explanation pertains to the way in which hotel investment in TSAs is implemented as a governance mechanism. In other words, this governance mechanism may have been ineffectively implemented in this setting. This governance mechanism relies on sanctions (i.e., potential economic forfeiture); sanctions only work when hotel opportunism is detected and appropriate punishments are imposed. When monitoring is ineffectual or when punishments are poorly implemented, the threat of economic losses rooted in the hotel's TSA investment has a limited ability to mitigate opportunism. Further research is needed to investigate the effectiveness with which brand headquarters monitors its hotels and sanctions them for opportunistic behavior.

Our research suggests several additional directions for further research. First, the role of ownership in managing opportunism has been assumed to be isomorphic. Our results suggest that it may not be. Two characteristics of ownership have been hypothesized in previous research to limit opportunism: (1) rewards and sanctions and (2) common norms and values (see Rindfleisch and Heide 1997). When coupled with an emphasis on relational exchange, ownership is associated with lower levels of opportunism. This suggests that the ownership characteristic of common norms and values mitigates opportunism. Similarly, TSA investment appears to mitigate ownership's effect of exacerbating opportunistic behavior. This suggests that TSA investment heightens the ownership characteristic of rewards and sanctions in limiting opportunism. Thus, ownership appears to be effective in limiting opportunistic behavior only when coupled with other governance mechanisms, and the operative characteristics of ownership seem to depend on the governance mechanism with which it is coupled. Further research is needed to resolve this issue. Second, we did not investigate how brand headquarters came to own company-owned hotels. Ownership by expansion suggests that the governance mechanism was in place *ex ante*, whereas ownership by acquisition implies *ex post* governance. Whether these alternative routes to company ownership produce dif-

ferential responses in terms of hotel opportunism has, to our knowledge, not yet been explored. Next, previous empirical work has also considered transaction-specific investments isomorphic. However, investments in idiosyncratic assets can be offered voluntarily, required as a condition of exchange, made *ex ante*, or made *ex post*.⁹ An unanswered research question is whether a firm's motives for making these investments, as well as their timing, differentially affect the firm's opportunistic behavior. Our regression equation explained less than 20% of the variation in hotel opportunistic behavior. This suggests that we have omitted several constructs that might explain such behavior. Therefore, we recommend that future studies of opportunism include constructs such as fairness (Kumar, Scheer, and Steenkamp 1995), conflict (Stern and Gorman 1969), exchange partner

replaceability (Heide and John 1988), and exchange partner investment in idiosyncratic assets (Rindfleisch and Heide 1997).¹⁰ Furthermore, we used statistical methods to untangle the relative emphasis of the three governance mechanisms. Further research might attempt to measure this relative emphasis directly. Finally, because these data were not longitudinal, we could not study properly the causal ordering of the constructs. For example, is the use of ownership a response to opportunism or is it used to limit such behavior proactively? In addition, does the temporal order of putting the governance mechanisms in place affect their efficacy in limiting opportunism? We leave the untangling of these effects for further research.

⁹We thank an anonymous reviewer for challenging us to think more carefully about these distinctions.

¹⁰In a previous version of this article, we found no significant statistical relationship between brand headquarters' investment in TSAs (as reported by the brand headquarters' field representatives) and hotel opportunism.

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No Pain, No Gain: A Critical Review of the Literature on Signaling Unobservable Product Quality

Recent research in information economics has focused on signals as mechanisms to solve problems that arise under asymmetric information. A firm or individual credibly communicates the level of some unobservable element in a transaction by providing an observable signal. When applied to conveying product quality information, this issue is of particular interest to the discipline of marketing. In this article, the authors focus on the ways a firm may signal the unobservable quality of its products through several marketing-mix variables. The authors develop a typology that classifies signals and discuss the available empirical evidence on the signaling properties of several marketing variables. They consider managerial implications of signaling and outline an agenda for future empirical research.

A consumer is considering the purchase of a new computer that is being advertised a great deal by a relatively new firm. Should the consumer interpret the high volume of advertising as informative about the quality of the computer?

A new manufacturer of a consumer product is offering a low introductory price. Should this low price be interpreted as evidence of low quality?

Traditional perspectives on the effects of information such as advertising and price have emphasized information acquisition, integration, and retrieval in consumer judgment and choice (see Bettman 1979; Rao and Monroe 1988). We propose that this traditional approach should be supplemented with an emerging tradition in information economics (Bergen, Dutta, and Walker 1992; Mishra, Heide, and Cort 1998; Rao and Monroe 1996). The information economics approach is based on the premise that different parties to a transaction often have different amounts of information regarding the transaction, and this information asymmetry has implications for the terms of the transaction and the relationship between the parties. In particular, when one party lacks information that the other party has, the first party may make inferences from the information provided by the second party, and this inference formation should play a role in the information the second party chooses to provide. This problem of informa-

tion asymmetry is now recognized as an important consideration in the study of marketplace exchanges in the disciplines of accounting, finance, labor economics, organizational behavior, and marketing.

Information asymmetry may exist between transacting parties in a variety of settings, including employers uncertain about the abilities of workers (Spence 1973), insurance providers uncertain about the health of insurance purchasers (Rothschild and Stiglitz 1976), and organizational buyers uncertain about the abilities of vendors (Stump and Heide 1996). Because of its central role in consumer decision making and marketing strategy, in this article, we focus on buyers' uncertainty about the quality of the product provided by sellers.

We examine solutions to one particular type of information asymmetry problem, *adverse selection*, which occurs when one party lacks the skills necessary to provide high quality yet claims to possess those skills (Eisenhardt 1989; Mishra, Heide, and Cort 1998). One possible solution to this problem is the use of *signals*, which are actions that parties take to reveal their true types (e.g., skill level). Quality signals can be transmitted in many forms, including brand name, price, warranty, and advertising expenditures. These variables represent fundamental choices that marketing managers make, including what to call a new product, how much to charge for it, whether to offer a warranty, and how much to spend on advertising. Although extensive behavioral research exists on how cues such as price, brand name, and store name affect consumer perceptions and choice (for an integrative review, see Rao and Monroe 1989), that approach views cues as shortcuts used by cognitively "lazy" consumers. Signaling posits a "rational" consumer who expects a firm to honor the implicit commitment conveyed through a signal because not honoring the commitment is economically unwise. Thus, unlike the behavioral perspective, the signaling approach considers the firm's incentives.

The signaling perspective has spawned several mathematical models that describe when and how a firm may suc-

Amna Kirmani is Assistant Professor of Marketing, Cox School of Business, Southern Methodist University. Akshay R. Rao is Associate Professor of Marketing, Carlson School of Management, University of Minnesota. The authors are listed in alphabetical order and contributed equally to the article. The authors are grateful for the comments of the three anonymous *JM* reviewers, Mark Bergen, Scott Davis, George John, Roger Kerin, Kent Monroe, and Orville Walker on a previous version of the manuscript, and they acknowledge the J.M. Jones endowment at the University of Illinois for sponsoring the 1997 Pricing Camp at which this article was conceived. In addition, the second author acknowledges the financial support of the McKnight Business and Economics Research Grant program at the Carlson School.

cessfully signal. Our basic purpose is to bring some coherence to these models and take stock of the current state of knowledge about quality signaling. Specifically, in this article, we (1) describe how marketing signals work, (2) develop a typology that sorts signals into theoretically justifiable and managerially useful categories, (3) highlight how signaling theory can help managers make marketing-mix decisions, and (4) outline an agenda for further research. In the process, we identify important assumptions of the approach, describe empirical evidence, and provide managerially pertinent prescriptions that speak to issues such as those raised in the opening vignettes.

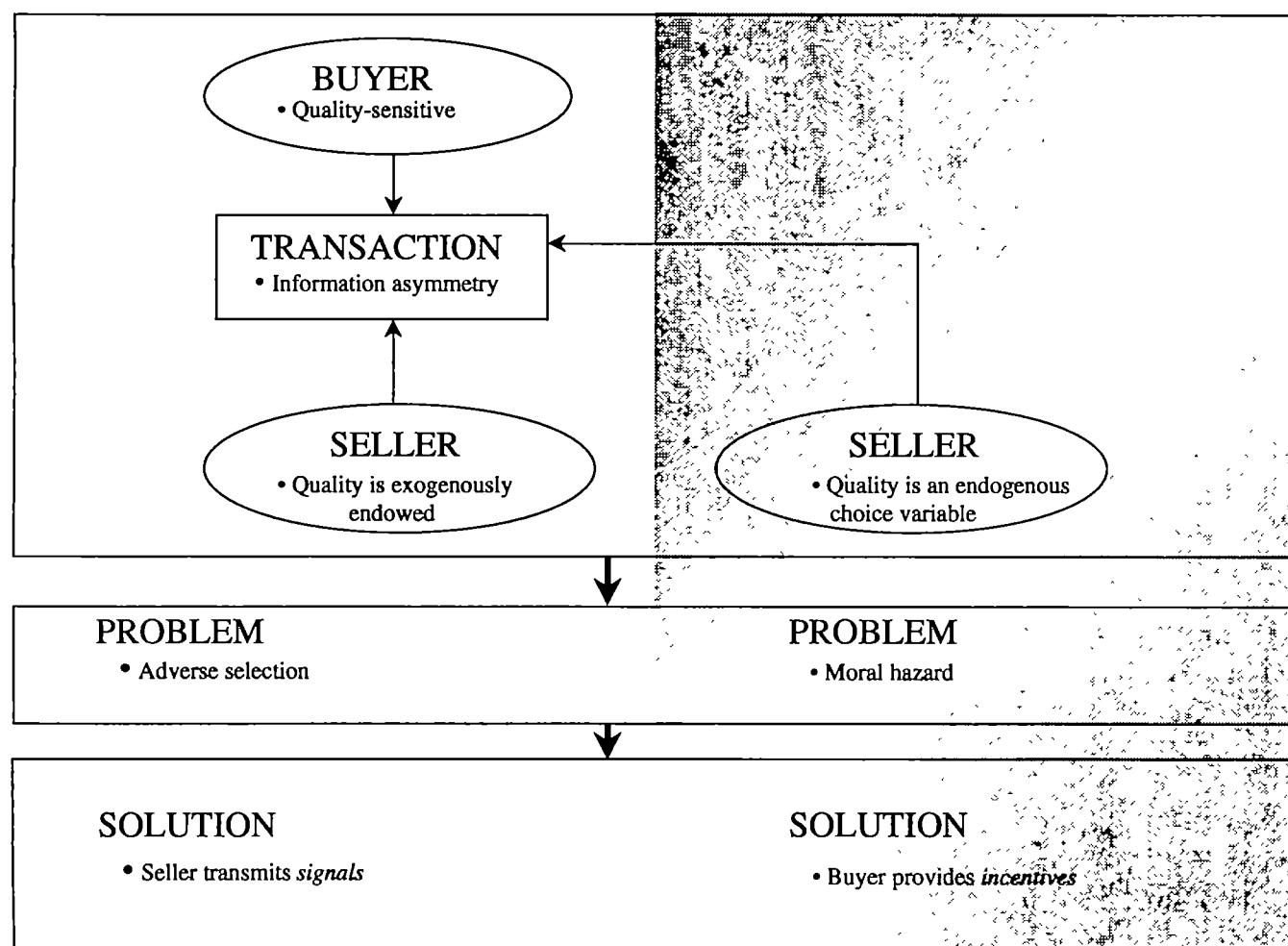
The focus of the article is different from other recent reviews in marketing. Bergen, Dutta, and Walker (1992) provide an overview of information asymmetry in the broader context of agency theory, but their discussion of signaling is limited; as they note, they "only scratched the surface of the wide range of ... [signals] available to marketers" (p. 16). Similarly, Rindfleisch and Heide (1997) critically evaluate the contributions to marketing of transaction cost analysis, a close cousin to signaling theory. Like signaling, transaction cost analysis speaks to appropriate governance structures that mitigate information problems, but unlike signaling, its

primary focus is postcontractual relationship management rather than precontractual information asymmetry. Finally, our context of firm-to-consumer signals is different from research on how firms signal to competitors (Heil and Langvardt 1994).

Asymmetric Information

Figure 1 summarizes the key issues in addressing information asymmetry about product quality, which occurs for "experience products" (Nelson 1974), that is, products whose quality can be evaluated only after purchase. Quality-sensitive buyers are unsure about the true quality of the seller's product. Information asymmetry can occur in two settings: *adverse selection*, in which the seller's unobservable quality is fixed and does not change from one transaction to the next (the unshaded area in the figure), and *moral hazard*, in which the seller can change quality from one transaction to the next (the shaded area). Although both situations involve buyers who are suspicious of sellers' quality claims, the mechanisms to resolve the information asymmetry differ. Adverse selection situations may be resolved by signals, whereas moral hazard problems may be resolved by incentives. Because the

Figure 1
Key Issues In Addressing Information Asymmetry



incentive-based mechanism to resolve moral hazard problems has been addressed in detail elsewhere (Rao and Monroe 1996), we focus on adverse selection here.

Adverse Selection

Because the seller cannot change quality from one transaction to the next in adverse-selection situations, the information problem disappears when the buyer learns about quality. Therefore, the key problem for the high-quality seller¹ is to induce trial and reveal quality. However, sellers' attempts to induce trial may not be successful, because quality-sensitive buyers may not want to suffer the negative consequences of poor quality.

The solution to the adverse-selection problem is the provision of a signal, which yields outcomes that are economically the best for high-quality firms, but low-quality firms can do better by not signaling (for a seminal article on signaling in job markets, see Spence 1973). To illustrate, consider the signaling and nonsignaling payoffs for high- and low-quality firms:

	Signal	Do Not Signal
High-quality firms	A	B
Low-quality firms	C	D

Signaling is a viable strategy when two conditions hold: (1) For the high-quality firm, the gains from signaling outweigh the gains from any other strategy; that is, $A > B$; and (2) for the low-quality firm, a nonsignaling strategy provides a bigger payoff than does signaling; that is, $D > C$. Under these conditions, a "separating equilibrium" occurs, in which firms self-select into the more profitable strategy, making it rational for consumers to infer that the firm that transmits a signal is the high-quality provider. If the low-quality firm were to mimic the high-quality firm's signal, it would lose money either directly (because signaling results in higher costs that will be forfeit when the low-quality seller's true quality is discovered) or indirectly (because of the opportunity costs of forgone strategy choices).²

If the payoff values in the previous schematic were such that $A > B$ and $C > D$, both firms would be better off signaling. In such circumstances, consumers cannot distinguish between low- and high-quality sellers, which results in a "pooling equilibrium." A pooling equilibrium may occur when the gains from falsely claiming high quality outweigh the losses from being discovered.

As described in the Appendix, the costs associated with signaling are, in part, determined by the high-quality firm, which seeks to separate itself from the low-quality firm. The

magnitude of such costs or potential costs serves as the high-quality firm's "bond" (Ippolito 1990), because the expenditure associated with the signal will be forfeit if false. Consequently, when signaling costs reach a particular level, low-quality firms will not signal. As long as this cost is low enough to make signaling attractive for the high-quality firm, it is the optimal signaling cost or bond. To understand better the properties of various signals and identify marketing implications, we next develop a typology that classifies signals on the basis of the bond at stake.

A Typology of Marketing Signals

In Table 1, we describe the typology. The primary classification is based on the monetary consequence incurred by the firm. We distinguish between *default-independent signals*, which are signals in which the monetary loss occurs independently of whether the firm defaults on its claim, and *default-contingent signals*, which are signals in which the monetary loss occurs only when the firm defaults on its claim. For example, signals such as investments in advertising and reputation involve up-front expenditures by the firm and are therefore incurred regardless of whether the firm's claim is true or false (i.e., in-equilibrium and out-of-equilibrium situations). Conversely, signals such as a high price or a manufacturer's warranty do not involve up-front expenditures and will prove to be monetarily detrimental only to firms that default on their claims (i.e., for out-of-equilibrium situations). Besides being theoretically grounded, this distinction is also managerially relevant, because signals that involve up-front expenditures are cash intensive, whereas signals that do not involve up-front expenditures may be funded by profits from sales to quality-sensitive buyers.³

Each of these broad categories can be further subdivided on the basis of the nature of the bond at stake. The up-front costs of default-independent signals differ as to whether the expenditure depends on an actual sale. *Sale-independent* default-independent signals, such as investments in advertising and brand equity, involve expenditures that occur whether or not a sale occurs. Conversely, *sale-contingent* signals, such as a low introductory price and slotting allowances, involve expenditures only in the presence of a sales transaction. As we discuss subsequently, this distinction leads to different conditions in which managers may use sale-independent and sale-contingent signals.

Finally, the bond underlying default-contingent signals is based on the potential of future consequences (i.e., future profits at risk) should the firm's quality claim turn out to be false. Therefore, the nature of the potential monetary loss forms the basis for classifying default-contingent signals. Under default-contingent signals, we define *revenue-risking* signals, such as high price, as signals that offer the firm's future revenues as a hostage and *cost-risking* signals, such as

¹For presentational convenience, we refer to sellers of high-quality products as high-quality firms and to sellers of low-quality products as low-quality firms.

²An important, technical issue in the construction of signaling models is the need to restrict out-of-equilibrium beliefs. For example, the signal recipient may hold beliefs that result in an interpretation other than that intended by the signal transmitter, as a consequence of which several other equilibria may be possible. Given the general, nontechnical purpose of our article, we do not discuss this issue here but refer the interested reader to Kreps (1990, particularly Chapter 12) and Cho and Kreps (1987) for a more technical discussion.

³Other classification schemes exist. For example, dissipative signals refer to inefficiencies relative to first best (i.e., they involve wasteful expenditures such as "burning money" through Super Bowl advertising), whereas nondissipative signals have no "dead-weight loss" associated with them (Bhattacharya 1980). Rao, Qu, and Ruekert (1999) recently used the dissipative/nondissipative terminology in a manner that roughly corresponds with our terminology.

TABLE 1
Characteristics of Signals

	Default-Independent Signals		Default-Contingent Signals	
	Sale-Independent	Sale-Contingent	Revenue-Risking	Cost-Risking
Examples	Advertising Brand name Retailer investment in reputation	Low introductory price Coupons Slotting allowances	High price Brand vulnerability	Warranties Money-back guarantees
Characteristic	Publicly visible expenditures before sale	Private expenditures during sales transaction	Future revenues at risk	Future costs at risk
Repeat purchase	Is important	Is important	Is important	Irrelevant
Monetary loss	Fixed	Variable or semi-variable	In the future	In the future
Secondary benefits	Buyer does not receive direct utility	Buyer receives direct utility	Buyer does not receive direct utility	Buyer receives direct utility
Appropriate when	Buyer cannot be identified easily	Buyer can be identified easily	Frequently purchased nondurables	Durables
Potential for abuse by consumer	None	High	None	High

warranties, as signals that offer the firm's costs as a hostage. Next, we describe each of these categories and compare their characteristics.

Default-Independent Signals of Unobservable Quality

Signals that involve the up-front expenditure of money fall into this category. The fundamental rationale behind default-independent signals is that the firm spends money now, expecting to recover it in the future, and such an expenditure would not have occurred had there been no information asymmetry. Rational consumers should realize that firms engaging in current expenditures that yield suboptimal profits will attempt to recoup these expenditures through future sales. These future sales would not occur if quality-related claims turned out to be false; therefore, quality-related claims made by firms that incur such costs must be true.

Sale-Independent Default-Independent Signals

Sale-independent default-independent signals are actions that occur regardless of whether anyone buys the product. Two marketing expenditures that fall into this category are advertising expenditures and investments in brand names.

Advertising expenditures. According to the information economics perspective, advertising content is informative about the quality of search attributes, and advertising execution (the quantity of advertising, its memorability, and the like) is informative about the quality of experience attributes (Nelson 1974). Advertising content is informative for search attributes, because the consumer can verify ad copy claims before purchasing. For experience attributes, firms could make a false claim, and the consumer would not be able to assess its veracity before purchasing. However, if a firm

spends large sums of money on advertising, claims about unobservable quality must be true or the firm would not recoup this expenditure. If a low-quality firm advertised heavily, it would induce trial, and its true (low) quality would be revealed; because no future purchases would occur, it would not recover the costs of advertising (Bagwell and Ramey 1988; Kihlstrom and Riordan 1984; Milgrom and Roberts 1986; Nelson 1974).

Brand name. Brand names can communicate unobservable quality (Erdem and Swait 1998), because branded sellers make several types of investments to build brand equity, including advertising, product design, and packaging modifications. These investments represent current expenditures that must be recouped from future sales. To the extent that a low-quality seller will lose this investment because future sales will not accrue after low quality is revealed, the low-quality seller has an incentive not to make investments in brand name. Conversely, sellers' investments in brand equity should raise the credibility of claims about unobservable quality.

Evidence. Several correlational studies have examined whether product quality is affected by advertising (Archibald, Haulman, and Moody 1983; Caves and Greene 1996; Mizuno and Odagiri 1989; Rotfeld and Rotzoll 1976) and brand name (Erdem 1998; Erdem and Swait 1998). These studies find general support for signaling predictions for both low-priced consumer goods (Rotfeld and Rotzoll 1976) and consumer durables (Phillips, Chang, and Buzzell 1983). Experimental work in advertising and brand equity is also consistent with signaling theory, though it appears that consumers do not spontaneously evoke the sophisticated rationale of signaling theory when making quality judgments (Rao, Qu, and Ruekert 1999) and may infer desperation on the part of the firm from high levels of prelaunch

advertising expenditures (Kirmani 1990, 1997; Kirmani and Wright 1989).

Sale-Contingent Default-Independent Signals

In the case of sale-contingent signals, the expenditure associated with the signal occurs at the time of the sale and provides essentially the same information as a sale-independent signal, that is, telling the buyer that the seller plans to recover signal costs through future profits. Two examples of sale-contingent signals are a low introductory price and slotting allowances.

Low introductory price. The possibility that low introductory prices (i.e., a price that is below the "full-information price") may sometimes communicate high unobservable quality has received little attention in the marketing literature. A low introductory price can serve as a signal of quality in the same way as advertising: The seller is communicating to the buyer a short-term loss to induce trial (Schmalensee 1978). This loss occurs in the form of revenues forgone from charging a price commensurate with the quality of the product. In general, the selling price is visibly below the marginal cost of production, thus alerting the buyer to the following implicit reasoning: "I am spending money wastefully now, but because my quality is good, I will recoup this money in the future from repeat purchases." The seller's plan is to raise product prices to a level commensurate with the product's true quality after this quality is established (Tirole 1988). If it turns out that the seller has sold a low-quality product, customers will not repeat purchase at the postintroductory high price, and the losses from the low introductory price are irrevocable.

There are some important technical requirements for a low introductory price strategy to work. First, it should be clear to the consumer that the seller's price is below the full-information price, that is, that the selling price is below the seller's marginal cost of production. Offers of compact discs for a penny and "five books for five bucks" may suggest a submarginal cost price. Second, the low price must be lower than any price that can be offered by a low-price/low-quality competitor (i.e., the competitor's marginal cost). Otherwise, a competitor will simply mimic the low price, and a pooling equilibrium will occur. Third, there must be a sufficiently large segment of quality-sensitive buyers who will repurchase at the postintroduction high price because they value the high-quality product sufficiently. If the firm is unable to attract a large number of customers at the higher price, the cost of the signal will not be recovered. Fourth, the high-quality segment's reservation price should be higher than the postintroduction high price; otherwise, the high-quality firm will not be able to support its future price.

Slotting allowances. A slotting allowance represents a signal in a manufacturer-to-retailer context (Chu 1992; Lariviere and Padmanabhan 1997; Shaffer 1991; Sullivan 1997). Slotting allowances are up-front fees (as either lump sums or functions of the number of cases purchased by stores in the chain) paid by the manufacturer to the grocery store retailer for access to shelf space for new products. The argument has been made that such slotting allowances are willingly paid by manufacturers that are confident about

the success of their new product introduction (i.e., the quality of the product from the standpoint of the retailer) (Chu 1992). A manufacturer that is not confident about the future success of a new product will likely balk at paying a slotting fee for fear of losing that investment. Thus, a slotting allowance functions as a default-independent signal that involves current expenditures (i.e., an up-front fee) that will be compensated for by future revenues (i.e., sales to grocery stores that profit from the successful new product and therefore repurchase).

Evidence. Little empirical evidence exists on the ability of sale-contingent default-independent signals to communicate unobservable quality. Dawar and Sarvary (1997) find no support for the argument that low introductory prices convey quality information. Sullivan (1997) examines secondary data about slotting allowances, and though she does not focus on the signaling issue, she is unable to dismiss the claim that slotting allowances signal new product demand. More recently, Rao and Mahi (2000) find no support for the signaling role of slotting allowances.

Commentary on Default-Independent Signals

As we noted previously, default-independent signals involve up-front costs that are rational if future sales generate sufficient margins to compensate for the costs of signaling. Repeat purchase is likely to occur only if the claims about unobservable quality are true. Thus, default-independent signals are an appropriate signaling device for products when repeat purchase is likely to occur. More generally, current buyers should have an impact on the probability of future sales because they are likely either to engage in repeat purchase or to influence others' purchase probabilities (e.g., they may be opinion leaders). Conversely, default-independent signals are inappropriate when current buyers do not influence future sales.

Sale-independent versus sale-contingent default-independent signals. Sale-independent and sale-contingent default-independent signals differ on several important dimensions (Table 1). A key distinction is that sale-independent signals result in a monetary loss regardless of whether the product is sold, whereas sale-contingent signals involve a monetary loss only when a transaction occurs. This property makes sale-independent signals a fixed cost and sale-contingent signals a variable cost, which has implications for a firm's ability to engage in a price war (Rao, Bergen, and Davis 2000).

Another key distinction is that sale-independent signals tend to address a broad audience that may include a substantial number of nonbuyers, as is the case for advertisements for luxury automobiles during the Super Bowl. Sale-contingent signals, in contrast, are generally targeted toward buyers; for example, only someone who buys the product truly knows that the seller has incurred a loss on the unit sold at a low introductory price.

Finally, sale-independent signals provide less of a direct benefit to the buyer than do sale-contingent signals. For example, both low introductory prices and slotting allowances help reduce the buyer's costs. Money changes hands in the form of consumers' surplus (the difference between the full-information price and the actual low introductory price) in

the case of a low introductory price, and in the form of a transfer payment in the case of slotting allowances. Notice that this money would not have changed hands under full information. In contrast, advertising and brand names typically do not provide direct utility, as no money is transferred from seller to buyer.

Default-Contingent Signals of Unobservable Quality

Whereas default-independent signals involve up-front expenditures, default-contingent signals are costless at the time the signal is transmitted, because the firm does not incur up-front expenditures relative to the expenditures that would be incurred in the absence of information asymmetry. These signals involve credible commitments to suffer future negative consequences if the product turns out to be of poor quality. Because such a consequence would only be visited on a firm that claimed to be of high quality when it actually was of low quality, a low-quality firm will be better off not making such a false claim; a low-quality firm will not offer commitments that will place it at future risk.

The credible commitment (or bond) that a firm offers can be of two types: loss of potential revenue (revenues at risk) or increases in costs (costs at risk). We first discuss revenue-risking default-contingent signals, followed by cost-risking default-contingent signals.

Revenue-Risking Default-Contingent Signals

The underlying rationale for revenue-risking default-contingent signals is that enhanced future revenues are available only to high-quality firms that employ the signal; thus, low-quality firms will be better off not employing the signal. An example of a revenue-risking signal is the charging of a high price.⁴

Although the notion that high prices may convey quality is well established in the behavioral marketing literature (see Rao and Monroe 1989), the signaling underpinnings of a high price may be less clear. A high price will be more profitable for the high- than the low-quality firm when there exists a small group of quality-sensitive buyers who are willing to pay a high price for high quality but will not repurchase if the product turns out to be of low quality. In addition, there needs to be a large group of quality-insensitive buyers who are price sensitive and will not buy at the high price. In such a setting, if the low-quality firm chooses a high price, it will reap profits from quality-sensitive buyers once but will lose profits from price-sensitive buyers who will not buy at the high price. Although the firm may reduce the price after quality is revealed, the single-period gains from high prices will be more than negated by the single-

period losses from not having sold to the price-sensitive segment in the first period. In contrast, if the high-quality firm charges a high price, the quality-sensitive customers will purchase from it and, upon discovering its true quality, will repurchase. For the high-quality firm, this series of purchases is more profitable in the long run than is charging a low price and catering to the quality-insensitive segment (Tirole 1989).

The reader may be puzzled by the observation that both high and low (introductory) prices can serve as signals. The key condition that drives the choice of a high or low introductory price is the relative profitability of the quality- and price-sensitive consumer segments. For a high-price strategy to work, low-quality firms must find it profitable to charge low prices, whereas high-quality firms must find it profitable to charge high prices. One circumstance that will result in this separation is based on the quality-sensitive segment's willingness to pay for superior quality. That willingness to pay must be sufficiently high to sustain long-term high prices but not so high that the first-period (uninformed) purchase from a low-quality firm at the high price will be more profitable for the low-quality firm than profits that accrue from low-priced sales to the price-sensitive segment.

From a managerial standpoint, the firm incurs no cash outlay when signaling with a high price, whereas it incurs a cost (direct or opportunity) when signaling with a low introductory price (because this low price is below the full-information price). In addition, whereas charging a high price is a long-term strategy, a low introductory price is temporary, because sales at a current low price will need to be offset by future high-priced sales. In contrast, no forgone current profits need to be recouped in the case of a high price.

Evidence. Although the behavioral literature on price-perceived quality relationships is substantial (see Rao and Monroe 1988, 1989), the empirical literature on price as a signal is sparse. Gerstner (1985) finds some equivocal evidence on the signaling ability of price; Tellis and Wernerfelt (1987) observe that price-quality correlations tend to be stronger when quality is important (for durables, when quality is expected to provide returns over a longer period of time) and unobservable (for packaged goods, the quality of which is not directly observable by inspection).

Cost-Risking Default-Contingent Signals

Cost-risking default-contingent signals do not involve monetary expenditures up front yet credibly convey information that false claims would involve a direct cost to the firm. The principal examples of this type of signal are performance warranties and money-back guarantees. Whereas manufacturers' performance warranties generally cover product breakdown and replacement of parts, money-back guarantees are typically of shorter duration but allow consumers to return the product without explanation.

The premise underlying the warranty signal is that firms selling low-quality products will face higher repair costs for the same level of warranty than will high-quality firms, because low-quality firms' products are likely to require more frequent repair. Consequently, a low-quality firm will self-select a strategy that offers relatively poor warranties, and

⁴Other examples of default-contingent signals that risk future revenues include umbrella branding (Wernerfelt 1988), which posts the future sales of existing brands as a bond when a new product is launched under the umbrella brand name. Similarly, a new brand without a reputation may be able to claim successfully that it is vulnerable to consumer sanction and thus signal high quality (Rao, Qu, and Ruekert 1999). Note, however, to the extent that a brand name uses a sunk investment in reputation as a bond, the signal is a default-independent one (Erdem 1998).

rational consumers can infer unobservable quality from the level of warranty coverage.

Like other default-contingent signals, the warranty signal is costless at the time it is offered. Its bonding ability accrues from the future costs a firm will incur if the product does not live up to its warranted quality claim. Note that this signal will work only if the provision of a good warranty by a low-quality seller raises the seller's costs (and price) to a level higher than that of the high-quality seller. If the low-quality seller can offer a good warranty and successfully absorb the higher costs of warranty fulfillment through charging a higher price (which is still lower than that of the high quality-seller), a pooling equilibrium will occur, and warranties will not be a successful signal of quality (Grossman 1981; Lutz 1989; Spence 1977).

Evidence. Correlational studies (Kelley 1988; Wiener 1985) suggest that warranties signal reliability of durable goods, whereas one experimental study (Boulding and Kirmani 1993) suggests that warranties successfully signal only for reputable firms.

Commentary on Default-Contingent Signals

Default-contingent signals involve no expenditure of money; rather, future earnings are staked to credibly claim unobservable quality. Although there are cash-flow advantages to using default-independent versus default-contingent signals, that no direct costs are incurred in the current period makes default-contingent signals potentially less credible. In other words, because the reasoning regarding future profits at stake is relatively subtle, consumers will need to be alerted to this reasoning (e.g., Rao, Qu, and Ruekert 1999).

In addition, consumers sometimes may not believe that default-contingent signals place the firm at risk. For example, consumers may be suspicious of warranty claims, because warranties offered by fly-by-night firms may not be easy to enforce. The presence of a legal regime that ensures that a low-quality seller cannot renege on its warranty commitments without suffering huge costs is one way to make the warranty claim credible.

Similarly, for revenue-risking signals, the high-quality firm's claim that its future profits are at risk whereas those of a low-quality firm are not is a sophisticated argument. Such an argument may be made in business-to-business markets, perhaps during a sales presentation in which the high-quality seller demonstrates the long-term profitability of a particular customer or account (Rao 1993). It is likely to be more difficult to make in mass markets.

Revenue-risking versus cost-risking default-contingent signals. As is summarized in Table 1, there are several points of distinction between default-contingent signals that risk revenues and those that risk costs. Chief among these is the requirement for repeat purchase for revenue-risking but not for cost-risking signals. One important implication of this distinction is that revenue-risking signals are self-enforcing; it is in the economic self-interest of the firm to honor its claims about unobservable quality. In contrast, cost-risking signals require an additional mechanism, such as a legal regime or the brand's reputation, to ensure that the signal works. For example, a warranty offered by a fly-by-night firm without a reputation in a country with no legal recourse

for consumers in the case of product failure is not enforceable and thus cannot serve as a signal. Moreover, because repeat purchase is unnecessary for cost-risking signals, these signals are particularly appropriate for durables, which are typified by long interpurchase intervals.

In addition, cost-risking default-contingent signals may represent a liability for the firm. Because warranties provide insurance against product failure, they may attract buyers who are careless in using the product or abuse the terms of the warranty (Cooper and Ross 1985; Lutz 1989). For example, Peterson and Hoffer (1994) report that insurance claims have increased for cars equipped with airbags, perhaps because drivers of such cars drive less carefully. Similarly, consumers can order and copy a piece of software or a compact disc and then return it claiming performance failure (Padmanabhan and Png 1995). The presence of a sufficient number of consumers who misuse a product when assured of inexpensive repair or replacements or return products that perform satisfactorily raises the cost of warranty fulfillment even for high-quality firms to a prohibitive level, which leads to a pooling equilibrium. In contrast, for revenue-risking default-contingent signals, the presence of undesirable buyers is not a problem; all that is necessary is a sufficiently large number of quality-sensitive buyers who will repurchase.

Having discussed the basic aspects of signaling theory, we now turn to a critical evaluation of the theory. In the next section, we reiterate the general and specific assumptions of signaling theory, discussing their applicability to real-world settings. We then consider managerial implications, presenting guidelines on which signals to employ in different circumstances. Finally, we outline directions for future marketing research on signaling.

A Critical Evaluation of Signaling Theory

Conditions for Successful Signal Transmission

Here we examine in detail four assumptions of signaling theory that relate to the issue of information asymmetry: prepurchase information scarcity, postpurchase information clarity, payoff transparency, and bond vulnerability.

Prepurchase information scarcity. Signaling is most useful for products whose quality is unknown before purchase, such as experience goods. If product quality is readily discernible or consumers are completely informed, the information problem is attenuated. Thus, signaling may not be appropriate for search products, well-known or mature products, or consumer markets with highly familiar buyers. Signaling may be particularly effective in markets for relatively new products or products about which consumers are relatively uninformed but are quality sensitive. For example, the market for baby food is populated by buyers who enter and exit fairly quickly and may not have the opportunity to develop expertise in the product category. This segment's lack of information and its risk aversion make it an appropriate target for a signal.

Postpurchase information clarity. If postpurchase inspection does not unambiguously reveal quality, consumers are unlikely to be able to exact retribution on the

offending seller, and signaling will likely not work. Therefore, signals are unlikely to convey quality for credence products, whose quality is not discernible even after purchase and use (Darby and Karni 1973). Similarly, signals are less useful for situations in which violations of quality claims cannot be unambiguously established after purchase. For example, a 1000-hour warranty on a light bulb is likely not a useful signal, because most consumers know they will not track the number of hours a light bulb has been left on and thus will not enforce the warranty.

Payoff transparency. Perhaps the greatest criticism against signaling models is that it assumes consumers and firms have knowledge of costs and other payoffs. On the one hand, consumers are supposed to be unable to evaluate quality before purchase. On the other hand, they are deemed to know vendors' margin and market share data, as well as the size of quality-sensitive segments in the market. Furthermore, it is assumed that firms are rational and aware of their own cost structures, an assumption that can be called into question. Perhaps only in business-to-business markets (e.g., in government contracts) will buyers be able to extract such cost information from vendors.

Bond vulnerability. Signaling is likely to fail when consumers do not believe that the bond posted by the firm is truly at risk. For example, for default-independent signals and in revenue-risking default-contingent signals, the principal mechanism to ensure the economic self-interest of the firm is profits from repeat purchase. However, consumers may not be aware of the manner in which this mechanism is supposed to operate. Specifically, consumers may be unaware of their own role in enforcing quality through the express or implied threat of boycott. Consequently, they may not correctly interpret the signaling rationale behind signals that rely on repeat purchase, which suggests that firms may be well advised to communicate this rationale.

Another reason consumers may suspect that the bond is not truly at risk is if the firm can find uninformed quality-sensitive consumers. For example, roadside restaurants may charge a high price while offering low quality, because they serve one-time customers who are separated from one another, which limits both repeat purchase and word of mouth. In such situations, signals that rely on repeat purchase will not be credible (Wolinsky 1983).

For signals that are not self-enforcing (such as warranties), the firm needs to operate in an environment in which the legal system makes the claim credible. Warranties are likely to be valueless at an airport duty-free shop for a domestic brand name unless the traveler plans to return to that country and use the product there. Furthermore, to the extent that consumer moral hazard is an issue, warranties are less likely to be credible, which renders them inappropriate for products for which the consumer's effort in caretaking is critical to product performance (Lutz and Padmanabhan 1995).

Finally, signals may not be credible when the signaling channel is so noisy that consumers fail to realize that the firm has used a costly signal (Hertzendorf 1993). In such situations, firms need to remind (or inform) consumers that costly expenditures have been incurred. For example, at the

point of purchase, consumers may forget that a firm engaged in Super Bowl advertising. Point-of-purchase reminders of the advertising may encourage recall of its expense (and signaling value). Similarly, consumers may recognize that warranty cards for durable gifts (e.g., video cameras, videocassette recorders) that are given during special occasions (e.g., seasonal holidays, birthdays, anniversaries, graduations) are often misplaced because of the number of gifts being opened and the attendant amounts of wrapping paper. Consequently, consumers may perceive the warranty as unenforceable. To guard against this, firms may benefit by ensuring that warranty information is retained by the retailer or mailed to the user separately.

In summary, signaling is most effective under conditions in which prepurchase information about quality is scarce, postpurchase information about quality is unambiguous, players are informed about the payoffs for both types of firms, and the bond is vulnerable to consumer sanction. Although the circumstances under which signaling may be an appropriate strategy are well described in the literature, managers have little guidance on which signals are best deployed in a particular situation. We turn to that issue next.

Managerial Implications

If signals are an appropriate mechanism to convey unobservable quality, firms will likely prefer to use the least expensive signal. However, the amount to be spent (or pledged) is the same for all signals. This amount should be just high enough to dissuade the low-quality firm from signaling, yet low enough to make signaling attractive for the high-quality firm.

To determine which type of signal is preferred in a given situation, we recommend that managers consider the factors that drive the behavior of three sets of players: consumers, competitors, and the company.

Consumers. If the necessary conditions for signaling are in place, issues of importance are as follows:

- (1) Is the target audience readily identifiable? Because sale-contingent signals tend to involve costs only when a sale occurs and provide a direct benefit to buyers, firms should generally prefer to use sale-contingent signals over sale-independent signals. Sale-contingent signals may be an attractive way to signal unobservable quality for new products for which buyers are relatively easy to identify, such as a new medical device that will be useful to pediatric cardiologists. When a target segment cannot be easily defined, however, a sale-independent signal is more appropriate.
- (2) Is there a fear of attracting the wrong type of buyer? The firm may be concerned that the wrong type of buyer may be attracted to the offer. For example, the offer of a sale-contingent signal such as a low introductory price may attract price-sensitive buyers who are not quality conscious. These buyers may take advantage of the low price and then not repeat purchase at the postintroductory high price. This behavior raises the costs of signaling and may make signaling prohibitively expensive.
- (3) Is there significant opportunity for initial buyers to influence future sales directly or indirectly? If current buyers can affect the probability of future sales, because they are likely either to repeat purchase or to influence others' future purchase probabilities, signals that emphasize

repeat purchase should be considered. These include default-independent signals as well as revenue-risking default-contingent signals. If current buyers cannot influence future sales, cost-risking default-contingent signals enter the set of feasible options. Indeed, consumer information transfer may also obviate the need to use signals. For example, after a small group of informed quality-sensitive consumers starts to use the product, others may follow suit because they can rely on informed consumers' willingness to buy as evidence of high quality (Bagwell and Riordan 1991). Therefore, sellers may choose to inform a small fraction of quality-sensitive buyers and gain sales from all quality-sensitive buyers without having to invest in signals that communicate to all of them (Davis and Rao 1997). Expense-paid trips for opinion leaders (e.g., leading medical practitioners) to observe the operation of new technologies is a form of such information provision.

- (4) How profitable is the quality-sensitive segment? Quality-sensitive buyers may vary in their willingness to pay for high quality. When buyers' willingness to pay is high, the high-quality firm will profit from sales to this segment, as will low-quality firms until their true (low) quality is discovered. Because the willingness to pay makes this segment attractive, high-quality sellers should use signals that provide gains from future rather than current sales (i.e., default-independent signals). Conversely, if quality-sensitive buyers' willingness to pay is relatively low, they are less attractive to low-quality sellers, and high-quality firms may choose signals that yield profitable sales in the current period (i.e., default-contingent signals). By the same logic, the size of the quality-sensitive segment should influence the choice of signal. If the quality-sensitive segment is relatively small, it is less attractive to the low-quality firm, and therefore the high-quality firm can signal using devices that emphasize current profits (i.e., default-contingent signals). Conversely, if the quality-sensitive segment is large, the benefits from falsely claiming high quality increase, which suggests that high-quality firms will need to employ signals that yield profits only after the first period (i.e., default-independent signals) to limit the low-quality firm's tendency to make a killing in the first period.

Competitors. High-quality firms may face a competitive environment in which other high-quality firms exist. The presence of these firms, all of whom are attempting to signal high quality, may have implications for the choice of signal.

- (1) Is there a cash flow-related constraint for the firm? Cost-free signals (i.e., default-contingent signals) that rely solely on the pledge of future profits are attractive to cash-poor firms. For example, Chrysler offered a high (seven-year/70,000-mile) warranty to attract customers in the early 1990s, when it was in financial trouble. Using the warranty helped both increase sales (i.e., generate short-term revenue) and postpone long-term expenditures for warranty redemption. Conversely, a cash-rich, high-quality firm may choose to use a default-independent signal, such as advertising, relative to a competitor's default-contingent signal.
- (2) Are there collaborators in association with whom a signal may be transmitted? Alternative means of signaling, such as using a brand ally (Rao, Qu, and Ruckert 1999) or a well-reputed retailer (Chu and Chu 1994), are options that exist for certain high-quality firms, based on their current relationships with vendors or channel members. For example, perhaps because of incumbency-based advantages, one high-quality firm may be able to use its association

with another reputable firm (i.e., use the second firm's brand equity) as a signal, an option that may not exist for a competitor.

Company. Factors internal to the company and its technology may also have an impact on the type of signal used.

- (1) What is the time lag between purchase and quality revelation? As has been noted in other commentaries (e.g., Rao and Monroe 1996), the speed with which an unobservable attribute's true level is revealed varies. Whether a sugar substitute has the disadvantage of an aftertaste is revealed immediately upon consumption, whereas the durability of an automobile tire is not revealed for several years. To the extent that quality is revealed immediately after purchase and use, the high-quality firm can anticipate profits in the second period. However, if quality revelation takes a long time, profits are deferred and are potentially less certain. Therefore, to the extent that quality revelation is typified by a long lag, signals that emphasize future profits are less attractive to the high-quality seller. Signals that are cost free but do not yield current profits (e.g., warranties) should be preferred, because low-quality firms cannot mimic such signals easily.
- (2) What are the cost disparities between high- and low-quality sellers? The relative cost advantage enjoyed by the low-quality firm will influence the choice of signal. When the low-quality firm's costs are considerably lower than those of the high-quality firm, the quality-sensitive segment becomes relatively more attractive to such low-quality firms. Consequently, high-quality firms must use signals that deter low-quality firms from signaling falsely. The cost associated with these signals must be sufficiently large to raise the costs of falsely claiming high quality and should also provide profits only after quality information is revealed. Therefore, signals that emphasize future gains from repeat purchase (i.e., default-contingent signals) dominate signals that yield gains from current sales (default-independent signals).

Further Research

We have drawn principally from the analytical modeling literature in economics, as well as from an emergent modeling literature in marketing on slotting allowances (Chu 1992; Lariviere and Padmanabhan 1997), reputation (Chu and Chu 1994), warranties (Padmanabhan and Png 1995), and umbrella branding (Montgomery and Wernerfelt 1992; Wernerfelt 1988). Although this literature is typified by considerable analytical rigor, a strong empirical tradition is lacking.

Empirical validation. The predictions of signaling models have recently begun to receive some empirical scrutiny. In Table 2, we describe the available empirical evidence about marketing signals of product quality, using our typology to classify them. The principal message from Table 2 is that whereas certain types of signals have received a good deal of empirical attention, others remain largely unexplored. For example, there is little empirical research on sale-contingent default-independent signals, such as low introductory prices and slotting allowances. In contrast, considerable empirical attention has been paid to sale-independent default-independent signals, such as advertising. Under the category of default-contingent signals, the role of high prices in signaling quality has received some scrutiny,

TABLE 2
A Sampling of Empirical Signaling Research

Authors	Type of Signal	Context	Findings
Sale-Independent Default-Independent Signals			
Archibald, Haulman, and Moody (1983)	Advertising	Analysis of secondary data correlating actual prices and objective advertising with published ratings of quality.	Advertising signals a better buy after quality ratings are published.
Caves and Greene (1996)	Advertising and high price	Analysis of secondary data correlating actual prices and advertising outlays with <i>Consumer Reports</i> ratings of quality.	Advertising is a source of information rather than a signal of quality. Price is a signal of quality for convenience goods.
Erdem (1998)	Umbrella branding	Analysis of scanner panel data for toothpaste and toothbrushes.	Umbrella brand extensions are expected to have the quality of the parent brand. Low-quality extensions have negative spillover effects on the parent brand.
Erdem and Swait (1998)	Brand name/equity	Survey data from undergraduate students analyzed by LISREL for two categories (jeans and juice).	The consistency and clarity of the brand signal are positively related to signal credibility. Signal credibility is positively related to perceived quality.
Kirmani and Wright (1989)	Advertising	Multiple experiments using university staff as subjects.	High-advertising expense leads to higher quality perceptions, but this belief can be undermined.
Kirmani (1990)	Advertising	Experiment manipulating advertisement size with university staff as subjects.	High-advertising expenditure and quality perceptions display an inverted U relationship as extremely high levels of expenditure suggest that the firm is desperate.
Kirmani (1997)	Advertising	Experiment varying ad repetition and color using student subjects.	There is an inverted U relationship between repetition and perceived quality for color but not black-and-white advertisements.
Mizuno and Odagiri (1989)	Advertising	Computer simulation.	Signaling predictions hold in the presence of consumer learning.
Rotfeld and Rotzoll (1976)	Advertising	Analysis of secondary data correlating actual advertising outlays with published ratings of quality.	Advertising is correlated with quality when the sample contains all brands but not when the sample contains only nationally advertised brands.
Sale-Contingent Default-Independent Signals			
Dawar and Sarvary (1997)	Low introductory price	Experiment manipulating separating, pooling, and ambiguous equilibria with low and high introductory prices using student subjects.	Purchase intentions are consistent with signaling theory, but quality judgments are not.
Rao and Mahi (2000)	Slotting allowances	Survey of grocery store buyers' tendency to charge slotting allowances for stocking new products.	Slotting allowances do not signal manufacturers' confidence in new product demand but are charged by large retailers to relatively small manufacturers.
Revenue-Risking Default-Contingent Signals			
Gerstner (1985)	High price	Analysis of secondary data correlating product category prices with <i>Consumer Reports</i> ratings.	Price-quality correlations vary considerably across product categories.
Rao, Qu, and Ruekert (1999)	Brand names	Multiple experiments on mall-intercept shoppers' perceptions in a brand alliance context.	Brands can signal quality on the basis of their investments in reputation as well as their vulnerability to future sanctions, even when they lack a reputation.

TABLE 2
Continued

Authors	Type of Signal	Context	Findings
Tellis and Wernerfelt (1987)	High price	Meta-analysis of existing studies that report price-quality correlations.	Price-quality correlations tend to be higher for durable products because consumers are more quality-sensitive for such products.
Cost-Risking Default-Contingent Signals			
Boulding and Kirmani (1993)	Warranties	Three-factor experimental test of the impact of warranties for reputable and reputation-less computers on MBA student sample.	Warranties signal unobservable quality when they are enforceable.
Kelley (1988)	Warranties	Analysis of secondary data correlating warranties with <i>Consumer Reports</i> ratings of quality.	Warranties are positively correlated with quality.
Wiener (1985)	Warranties	Analysis of secondary data correlating warranties with <i>Consumer Reports</i> ratings of quality.	Warranties are an accurate signal of product reliability.

though the evidence is largely correlational (Gerstner 1985; Tellis and Wernerfelt 1987). Finally, empirical support for the use of default-contingent cost-risking signals has focused primarily on warranties. Little evidence is available on money-back guarantees or the role of warranties in the presence of consumer moral hazard.

On the basis of the literature summarized in Table 2, we offer four major suggestions for further research in the signaling area. First, there is a need for primary empirical evidence on sale-contingent default-independent signals (e.g., low introductory price, coupons, slotting allowances). Second, there is a need for empirical evidence on several other default-independent signals that involve up-front expenditures and are relevant to marketing practice, such as plush carpeting and decor, store location, retailer reputation, and quality of salespeople. Third, although many of the analytical signaling models incorporate more than one signal (e.g., Milgrom and Roberts [1986] discuss the role of price and advertising), empirical research on consumer responses to multiple signals is sparse. Our typology suggests that combining signals from different categories is perhaps more appropriate than combining signals from the same category. Such combinations enable the seller to benefit from using the entire set of properties that belongs to complementary signals rather than duplicate the same property by using multiple signals that are substitutes. Moreover, research could examine several other issues, such as whether signals operate in an additive or multiplicative fashion, whether a firm may communicate too many different signals and cause information overload, and whether there is an optimal number of signals. Furthermore, because many signals are received by audiences other than those for whom the signal is intended, a signal may have unintended (though desirable) consequences. For example, a signal may provide information to current and potential competitors about a firm's strategy, a topic that has received some attention in the marketing literature (Heil and Langvardt 1994). Fourth, research on the boundary conditions for sig-

naling is warranted. This includes general conditions for signaling as well as conditions for the use of a particular type of signal. In particular, the prescriptions offered in the Managerial Implications section could be rephrased as testable theoretical propositions. For example, tests of the implications of (1) consumer moral hazard, (2) the profitability of the quality-sensitive segment, and (3) the cash availability to the firm on the ability to signal and choice of signal are subsets of seemingly interesting research issues. Addressing these issues by examining consumer perceptions and the firm's incentives simultaneously may lead to a richer understanding of marketplace phenomena.

Appendix

The payoffs for the two types of firms (high- and low-quality) from signaling and not signaling are described here. Because this analysis is intended to be illustrative rather than exhaustive, we make several simplifying assumptions for expository convenience.

Assumptions

1. Assume two firms whose quality (high and low) is exogenously endowed.
2. Assume two segments of buyers with different, stable tastes for quality (high and low).
3. Assume that quality-sensitive buyers will enter only when a firm signals.
4. Assume that there is vicarious learning between segments only when quality-sensitive buyers enter the market and observe the quality of their purchases as well as the purchases from the other firm by other buyers.
5. Assume that though quality is unobservable initially, quality is fully and unambiguously revealed after consumption in the first period.

Notation

p_l and p_h are the prices charged by the low-quality and high-quality firms,

mc_l and mc_h are the marginal costs of producing low and high quality,
 q_l and q_h are the quantities sold to the quality-insensitive and quality-sensitive segments each period,
 n is the number of times the product will be purchased, and
 c_s is the cost of the signal.

Payoffs

There are four possible scenarios:

First, the high-quality firm signals and the low-quality firm does not (i.e., cells A and D in our schematic). In Cell A, the high-quality firm's payoff is

$$(1) \quad (p_h - mc_h) \times q_h \times n - c_s.$$

In Cell D, the low-quality firm's payoff is

$$(2) \quad (p_l - mc_l) \times q_l \times n.$$

Here, the two firms cater to differentially quality-sensitive buyers with products of differing quality.

Second, neither firm signals (i.e., cells B and D in our schematic). In Cell B, the high-quality firm's payoff is

$$(3) \quad (p_h - mc_h) \times \frac{1}{2}(q_l) \times n.$$

In Cell D, the low-quality firm's payoff is

$$(4) \quad (p_l - mc_l) \times \frac{1}{2}(q_l) \times n.$$

Here, because neither the high- nor the low-quality firm is signaling, we simply assume that the two firms share the entire market for quality-insensitive buyers equally. By Assumptions 3 and 4, quality-sensitive buyers are not in the market and therefore do not learn about quality.

Third, the high-quality firm does not signal, and the low-quality firm falsely signals (i.e., Cells B and C in our schematic). In Cell B, the high-quality firm's payoff is

$$(5) \quad (p_h - mc_h) \times (q_l) + (p_h - mc_h) \times (q_h) \times (n - 1) = (p_h - mc_h) \times [q_l + q_h \times (n - 1)].$$

In Cell C, the low-quality firm's payoff is

$$(6) \quad (p_l - mc_l) \times q_h - c_s + (p_l - mc_l) \times q_l \times (n - 1) = (p_l - mc_l) \times [q_h + q_l \times (n - 1)] - c_s.$$

In the first period, all quality-sensitive buyers purchase from the low-quality firm, and vice versa. After both firms' true quality is revealed, the high-quality firm will acquire all quality-sensitive buyers, and the low-quality firm will acquire all quality-insensitive buyers.

Fourth, both firms signal (i.e., Cells A and C in our schematic). In Cell A, the high-quality firm's payoff is

$$(7) \quad (p_h - mc_h) \times \frac{1}{2}q_h - c_s + (p_h - mc_h) \times q_h(n - 1) = (p_h - mc_h) \times [\frac{1}{2}q_h + q_h(n - 1)] - c_s.$$

In Cell C, the low-quality firm's payoff is

$$(8) \quad (p_l - mc_l) \times \frac{1}{2}q_h - c_s + (p_l - mc_l) \times q_l \times (n - 1) = (p_l - mc_l) \times [\frac{1}{2}q_h + q_l \times (n - 1)] - c_s.$$

Here, the quality-sensitive market is initially shared by both firms, but when quality is revealed, the high-quality firm acquires all quality-sensitive customers and the low-quality firm caters only to quality-insensitive customers.

Conditions for a Separating Equilibrium

Here, the low-quality firm should choose not to signal, which will occur when $D > C$:

$$(9a) \quad (p_l - mc_l) \times \frac{1}{2}(q_l) \times n > (p_l - mc_l) \times [q_h + q_l \times (n - 1)] - c_s,$$

which reduces to

$$(9b) \quad c_s > (p_l - mc_l) \times [q_h + (n - 2)(\frac{1}{2}q_l)].$$

In Equation 9, the left-hand side is the smaller of Equations 2 and 4, and the right-hand side is the larger of Equations 6 and 8. This condition specifies the most restrictive circumstance for when the gains from not signaling dominate the gains from signaling falsely.

In addition, the high-quality firm should choose to signal, which will occur when $A > B$. Although it is clear that Equation 7 is smaller than Equation 1, whether Equation 3 or Equation 5 is greater depends on the relative sizes of the quality-sensitive segment and the quality-insensitive segment. Consequently, the condition can be stated as

$$(10a) \quad (p_h - mc_h) \times [\frac{1}{2}q_h + q_h(n - 1)] - c_s > (p_h - mc_h) \times \frac{1}{2}(q_l) \times n,$$

which reduces to

$$(10b) \quad (p_h - mc_h) \times [q_h(2n - 1)/2 - \frac{1}{2}q_l \times n] > c_s,$$

or

$$(10c) \quad (p_h - mc_h) \times [\frac{1}{2}q_h + q_h(n - 1)] - c_s > (p_h - mc_h) \times [q_l + q_h \times (n - 1)],$$

which reduces to

$$(10d) \quad (p_h - mc_h) \times (\frac{1}{2}q_h - q_l) > c_s.$$

A little algebra shows that Equation 10b applies if $\frac{1}{2}q_l(n - 2) > q_h(n - 1)$; otherwise Equation 10d applies.

Conditions for a Pooling Equilibrium

The basic argument is captured in a simple reversal of the conditions for a separating equilibrium described previously, that is, if $B > A$, or $C > D$. If either of these conditions prevails, the signal will be valueless. Specifically,

$$(11) \quad (p_l - mc_l) \times [q_h + (n - 2)(\frac{1}{2}q_l)] > c_s$$

indicates that the payoffs from C (falsely signaling) exceed the payoffs from D, because the cost of the signal (c_s) is relatively low for the low-quality firm.

Alternatively,

$$(12a) \quad (p_h - mc_h) \times [q_h(2n - 1)/2 - \frac{1}{2}q_l \times n] < c_s,$$

or

$$(12b) \quad (p_h - mc_h) \times (\frac{1}{2}q_h - q_l) < c_s,$$

indicates that the payoffs from B (not signaling) exceed the payoffs from A, because the cost of the signal is relatively high for the high-quality firm. Again, whether Equation 12a or Equation 12b applies will depend on whether $\frac{1}{2}q_l(n - 2) > q_h(n - 1)$.

In summary, if either Equation 11 or the relevant one of Equations 12a and 12b applies, a pooling equilibrium will occur.

Size of Bond

The size of c_s is important in determining whether a separating equilibrium is obtained. c_s needs to be sufficiently large that the low-quality firm shies away from false signals and sufficiently small that the high-quality firm will engage in the expenditure. In other words, from Equations 9a, 10b, and 10d,

$$(13a) \quad (p_h - mc_h) \times [q_h(2n - 1)/2 - \frac{1}{2}q_l \times n] > c_s > (p_l - mc_l) \times [q_h + (n - 2)(\frac{1}{2}q_l)],$$

or

$$(13b) \quad (p_h - mc_h) \times (\frac{1}{2}q_h - q_l) > c_s > (p_l - mc_l) \times [q_h + (n - 2)(\frac{1}{2}q_l)],$$

depending, as discussed previously, on whether $\frac{1}{2}q_l(n - 2) > q_h(n - 1)$.

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The Impact of Ad Repetition and Ad Content on Consumer Perceptions of Incongruent Extensions

The author challenges the view that incongruent extensions are doomed to fail and demonstrates that brand extension ad content and repeated exposure to those advertisements influence consumer reactions to incongruent extensions. In a study of four highly regarded brands, participants who viewed brand extension advertisements five times evaluated incongruent extensions more positively, expressed higher usage intentions, indicated more favorable consistency judgments, and exhibited increased elaboration and more positive elaboration than did participants who viewed the advertisements only once. This relationship was attenuated for highly incongruent extensions, for which the advertisement evoked primarily peripheral brand associations instead of benefit brand associations. However, for moderately incongruent extensions, advertisements that evoked either peripheral or benefit associations were equally effective. Process measures indicate the importance of the extent and nature of elaborative processing.

Brand leveraging, attaching a brand name to a new product, remains one of the most profitable and frequently employed marketing strategies. Extending brands both within and beyond the original product category enables firms to tap into their substantial brand equity investment. Marketers are frequently motivated to leverage their brand names far afield from the brand's current offerings as they seek significant growth opportunities in distant categories. For example, Waterford, an Irish luxury brand known for its expensive crystal, extended its name to writing instruments as it sought additional growth outside of that derived from the more closely related categories of china, cutlery, and table linens (White 1997).

Unfortunately, to the dismay of growth-oriented brand managers, the conventional wisdom suggests that a brand's ability to stretch may be limited. One particularly limiting factor is that of fit or consistency between the brand and the extension (Aaker and Keller 1990). Unless consumers see a basis for fit, they usually disapprove of the extension. There is a growing amount of research that testifies that brand extension consistency,¹ manipulated in various ways, is a key factor that limits extension acceptance (Aaker and Keller 1990; Boush and Loken 1991; Broniarczyk and Alba 1994; Meyers-Levy, Louie, and Curren 1994). In other words,

congruent extensions enjoy success, but incongruent extensions usually do not.

Because of the strategic importance of brand stretch, extension consistency has emerged as a critically important research topic. Yet this research is limited because it views extension consistency as a fixed property, something an extension either does or does not have, rather than as a subjective perception that may shift with presented information. Previous research does not adequately address the possibility that advertising influences consumer perceptions of incongruent extensions.² Prior research presents consumers with no or minimal information that would direct consumer thinking about the linkage between an extension and a brand—presenting brand extension name only, brand extension name with limited attribute information (e.g., consumer report tables), or brand extension name with simple verbal advertisements. None of this research has explored the role of advertising content under conditions of repeated exposure to realistic advertisements. This represents a significant gap in the literature because both affect elaborative processing, an important determinant of judgments. Indeed, prior research implies that elaborative processing can influence consumer perceptions of brand extension fit and thereby change consumer evaluations of incongruent extensions (Aaker and Keller 1990; Broniarczyk and Alba 1994; Meyers-Levy, Louie, and Curren 1994). Nevertheless, elaboration's role is not completely clear, because the few studies that reported process measures examined elaboration as an inherent property of the extension (Boush and Loken 1991; Meyers-Levy, Louie, and Curren 1994) instead of manipulating elaboration across equivalent extensions.

The premise of this study is that ad repetition and ad content influence consumer reactions to incongruent extensions.

¹The broader view of consistency indicates that it can arise from a variety of brand associations; it is not driven by product category similarity only (e.g., Broniarczyk and Alba 1994; Park, Milberg, and Lawson 1991).

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²Consistent with Mandler (1982, p. 14) and Bruner and Postman (1949, p. 208), incongruity is operationalized as the degree to which a brand extension is surprising or unexpected.

sions. Message repetition should foster greater elaboration that in turn should generally bolster extension judgments. However, extension judgments may not necessarily improve with ad repetition. Unless the brand associations elicited by the ad content offer a sufficient basis for consumers to interpret how the brand links with or benefits the extension, particularly in the case of highly incongruent extensions, consumers' initial perceptions may persist or even polarize in spite of the advertising effort. To explore these possibilities, this study reports the findings of several pretests and a main study of four separate brands. Participants in the main study were exposed over multiple sessions, either once or five times, to realistic color print brand extension advertisements of highly rated and well-known brands (Heineken, Crest, Keebler, and Michelin). Extensions were manipulated such that they were congruent, moderately incongruent, or highly incongruent. Ad content was manipulated such that advertisements evoked either benefit or peripheral brand associations. The collection of extension consistency judgments, extension evaluations, extension usage intentions, and thoughts induced by the advertisements provided data to detect participants' reactions and psychological processes in response to these manipulations.

The brand asset is valuable, and managers are motivated to stretch it as far as they dare. To managers' chagrin, the conclusions of prior research caution that the brand associations an extension initially evokes set the brand's leverage boundary, because these associations determine consumer perceptions of extension fit. Given this conclusion, the present research has important managerial implications because it seeks to uncover whether and how advertising, a key communication tool, can expand the brand's extension frontier. If ad content and repetition do influence the elicitation of brand associations and the extent to which consumers reflect on the relevance of these associations for an extension, the outer limits of a brand's extendability are potentially malleable and subject to managerial direction.

Theory and Hypotheses

Advertisements influence what is elaborated. An advertisement can conjure up the brand's image or schema, the associations that differentiate the brand and make it valuable to consumers, along with a portrayal of the extension product itself. As a consequence, extension advertisements should evoke brand associations, along with thoughts about the extension and its features, attributes, and/or benefits. For example, consider these brand associations and extension thoughts elicited by an advertisement for Michelin sandals:³ "This is just crazy. Sports thongs ... or whatever. From tires to shoes. A very strange combination..., however, both have to do with rubber and transportation of some form." The thoughts are primarily focused on the extension—that is, they are thoughts of incongruity and fit—but appear to be influenced by thoughts of the brand, namely, tires, transportation, and rubber.

³Participants' actual responses (in quotation marks) are used throughout for illustrative purposes.

Previous research implies that these ad-evoked thoughts will make a difference. These findings demonstrate that a variety of brand associations—such as product category similarity (Aaker and Keller 1990; Boush and Loken 1991), brand benefits (Broniarczyk and Alba 1994), and even abstract attributes, including prestige (Park, Milberg, and Lawson 1991)—influence consumer judgments. Given this, advertisements should make a difference because they can increase the salience of crucial brand associations that help consumers infer extension features, benefits, or appearance and thereby understand how an extension fits. For example, an advertisement for Michelin sports sandals might pictorially illustrate that the sandals are made from tire material and portray through copy how Michelin's research and development on the rubber compounds and tread patterns help ensure the sandals' safety for recreational activities. This advertisement directs the consumer's elaboration toward Michelin's reputation for tread and safety and makes explicit how these features overlap with and enhance the performance of the sandals.

Advertising Repetition

Even when an advertisement influences which brand associations come to mind, one exposure to an advertisement may not be enough to skew thinking toward the subtle overlap between brand and incongruent extension and thereby counter the more imposing thoughts of incongruity. An incongruent extension often entices attention and substantial elaboration of the extension's highly salient source of incongruity (Mandler 1982; Meyers-Levy, Louie, and Curren 1994; Meyers-Levy and Tybout 1989). For example, Michelin sandals might initially evoke thoughts about the inconsistency of a tire manufacturer that also produces shoes (e.g., product category dissimilarity as a basis of incongruity). This heightened elaboration of incongruous aspects of an extension may interfere with elaboration of other less accessible brand associations that could enlighten consumers about a basis for the extension's consistency. Therefore, although overall elaboration is frequently higher for incongruent compared with congruent extensions, because the elaboration is often negative and concerned with the inconsistency, extension perceptions and evaluations suffer (Mandler 1982; Meyers-Levy, Louie, and Curren 1994; Meyers-Levy and Tybout 1989).

When extensions are incongruent, they may require very high elaboration in which key brand associations guide inferences of extension features. If so, repeated exposure to advertisements should be critically important because ad repetition can enhance the amount and valence of message elaboration, magnifying the advertisement's positive impact (Anand and Sternthal 1990; Batra and Ray 1986; Cacioppo and Petty 1979).⁴ This occurs for complex messages in particular, which are initially difficult to process. For persuasive messages, such as an advertisement for an incongruent

⁴The present research only addresses the positive impact of ad repetition and not the negative impact that might occur at high levels of exposure as tedium begins to dominate. The primary purpose here is to explore whether a moderate level of message repetition might enhance consumer responses to incongruent extensions.

extension, repetition improves the receiver's ability to comprehend the message and as a consequence enhances message support and decreases counterargumentation (Cacioppo and Petty 1979). Before the onset of tedium, it encourages more (fewer) positive (negative) thoughts (Anand and Sternthal 1990; Batra and Ray 1986; Cacioppo and Petty 1979). In the case of incongruent extensions, which invite negative thoughts at one exposure, repeated exposure should redirect processing away from these negative thoughts of inconsistency. For these extensions, as elaboration increases with repetition, favorable thoughts and thoughts of fit should increase.

It is well documented that schema-driven elaboration tends to distort information such that inconsistent information becomes consistent with the schema (Alba and Hasher 1983; Alba and Hutchinson 1987; Bartlett 1932; Tesser 1978). Generalizing from these researchers' broad conclusions, the ways that brand schema-directed thought makes incongruent extension cognitions more consistent with the brand schema are threefold: (1) the focus of elaboration is redirected toward consistent associations that are not as salient initially (e.g., "Like tires on your feet"), (2) the inconsistent cognitions diminish, and (3) cognitions are reinterpreted to be more evaluatively consistent (e.g., "I believe Michelin to be a good brand and feel that they could make a quality shoe"). To illustrate how the brand schema directs and changes the valence of elaboration for incongruent extensions, consider these actual thoughts from two different participants in response to an advertisement featuring Michelin sandals, one who received one exposure ("I don't like the idea of a tire company making shoes") and the other who received multiple exposures ("I like how they used scenery to describe where the sandals could be used and made them appear to work just like tires"). Whereas the one-exposure participant focuses on the inconsistency of a company that manufactures both shoes and tires, the repeated-exposure participant focuses on the sandals' benefits, which seem to arise from the thought that Michelin would imbue the shoes with a tirelike quality. For the latter consumer, a new performance benefit becomes salient, the manufacturing inconsistency thought disappears, and the potential manufacturing inconsistency thought takes on a consistent and positive value.

With the change in the valence of thoughts for incongruent extensions, evaluations and perceptions of extension consistency improve through assimilative and accommodative processes (Mandler 1982; Meyers-Levy, Louie, and Curren 1994; Meyers-Levy and Tybout 1989; Piaget 1970; Tesser 1978). The assimilation process increases the salience of favorable extension attributes and increases their consistency with the brand schema. These elaborated favorable attributes, which were initially less accessible, play a heightened role in extension judgment. Simultaneously, the formation of linkages between brand and extension alter the brand schema, allowing it to accommodate or accept the extension more readily. Both processes counter the negative effects of incongruity.

H_1 : Repeated exposure is expected to lead to the following differences for incongruent brand extensions: (a) Evaluations are higher with repeated exposure than with one exposure.

(b) Usage intentions are higher with repeated exposure than with one exposure. (c) Judgments of fit/consistency between the extension and extending brand are more favorable for repeated exposure than for one exposure. (d) Total thoughts are higher for repeated exposure than for one exposure. (e) Negative (positive) thoughts and thoughts of inconsistency (fit) are lower (higher) for repeated exposure than for one exposure.

The Moderating Impact of Ad Content and Extremity of Incongruity

A brand's concept (Park, Jaworski, and MacInnis 1986) may provide a repertoire of brand associations from which the marketer may choose to position a new extension. The choice of brand associations to feature in an extension advertisement is critical because it is these associations that entice consumers to reflect on how an incongruent extension actually fits with the brand. As a consequence of eliciting different brand associations for consumers to elaborate, advertisements should vary in repetition efficacy as a function of the extremity of extension incongruity.

Consider that ad content that focuses consumer attention on associations that are central to the benefits provided by the brand invites consideration of a deep basis of fit with an extension. Benefit associations, such as Crest's performance in dental hygiene or Michelin's safe tread, should influence extension attitudes through analytic or elaborative inferential processes, just as central message arguments do (Petty, Cacioppo, and Schumann 1983). When an advertisement illustrates how brand attributes and benefits improve the extension's ability to provide benefits, consumers will likely infer judgments of fit and consistency on the basis of these.

Ad content that portrays peripheral brand associations, such as package, logo, color, or mascot, depicts a relatively superficial basis of fit. With peripheral brand associations, such as the Keebler Elves or Heineken's green bottle, consumers should interpret only a surface level of similarity between the extension and brand. Peripheral brand associations should influence extension attitudes through heuristic or conditioning processes in a manner similar to that of other peripheral cues in advertisements (Petty, Cacioppo, and Schumann 1983), primarily by encouraging nonanalytic inferencing such as halo and similarity judgments based on noncritical surface features (for a discussion of analytic versus nonanalytic inferencing, see Alba and Hutchinson 1987).

Previous research in other contexts demonstrates that ad repetition can magnify these simple associative learning or peripheral processes (e.g., Shimp 1991; Stuart, Shimp, and Engle 1987). This research suggests that advertisements that pair extensions with peripheral brand associations that elicit simple positive evaluative responses may improve extension perceptions. Peripheral associations can wield influence even in high elaboration situations by biasing message processing and interpretation (Petty, Cacioppo, and Kasmer 1988). Simply by making associations that provide a peripheral basis of fit conspicuous, advertisements can influence perceptions of extensions.

However, previous research indicates that optimal cognitive associative learning occurs when the conditioned stimulus (incongruent extension) and the unconditioned stimulus (brand) somehow fit or belong together (Shimp

1991). This research suggests that for moderately incongruent extensions, repeated pairing of the extension with peripheral brand associations may be sufficient for improved extension evaluations. Advertisements that evoke peripheral brand associations may perform as well as advertisements that evoke brand benefits when extensions are only moderately incongruent. Yet advertisements that elicit primarily peripheral brand associations may have limited ability to enhance consumer perceptions of highly incongruent extensions. Simple paired learning is not likely to be sufficient for consumers to become favorable toward highly incongruent extensions. The simple positive evaluative responses and surface-level similarity evoked by brand peripheral associations are unlikely to counter the stronger negative elaborative processing extreme incongruity fosters.

Highly incongruent extensions may require a deeper understanding of how the brand's attributes and benefits imbue the extension with similar beneficial properties. If so, for highly incongruent extensions, the efficacy of repetition should increase when the extension advertisement elicits brand benefit associations. Brand benefit knowledge, which is important for inferential processing (Alba and Hutchinson 1987), helps consumers determine whether the extension satisfies a need (Broniarczyk and Alba 1994). Similar to strong message arguments, these associations provide consumers with something to chew on and help them generate message support. By repeatedly considering the benefit overlap between the brand and extension and, as a consequence, understanding how the extension will perform in a superior manner, consumers may eventually react positively to incongruent extensions. Highly incongruent extensions, in particular, may benefit from the deep overlap provided by benefit brand associations compared with the surface overlap provided by peripheral brand associations.

The previous discussion suggests that for moderately incongruent extensions, repeated exposure's impact holds regardless of whether the extension ad content evokes primarily peripheral brand associations or primarily benefit brand associations. Therefore,

H₂: In the moderately incongruent case, for advertisements evoking peripheral brand associations and for advertisements evoking benefit brand associations, (a) evaluations are higher with repeated exposure than with one exposure, (b) usage intentions are higher with repeated exposure than with one exposure, (c) judgments of fit/consistency between the extension and the extending brand are more favorable for repeated exposure than for one exposure, and (d) negative (positive) thoughts and thoughts of inconsistency (fit) are lower (higher) for repeated exposure than for one exposure.

However, this line of reasoning indicates that the efficacy of repetition for highly incongruent extensions is reduced when extension ad content evokes primarily peripheral

brand associations compared with when it evokes primarily benefit brand associations. Therefore,

H₃: In the highly incongruent case, for advertisements evoking benefit brand associations, but not for advertisements evoking peripheral brand associations, (a) evaluations are higher with repeated exposure than with one exposure, (b) usage intentions are higher with repeated exposure than with one exposure, (c) judgments of fit/consistency between the extension and extending brand are more favorable for repeated exposure than for one exposure, and (d) negative (positive) thoughts and thoughts of inconsistency (fit) are lower (higher) for repeated exposure than for one exposure.

Methods

Development and Pretesting of Stimulus Materials

The development of stimulus material was guided by previous brand extension research and confirmed with pretests. The brand replicates (i.e., Heineken, Crest, Keebler, and Michelin) were demonstrated in a pretest to have established brand schemas and positive evaluations. Moreover, a pretest of brand extension concepts demonstrated that for each brand, the incongruent extension was judged as significantly more unexpected and surprising than its congruent counterpart (see Table 1). Congruent extensions were included in the main study to serve as reference points for each moderately and extremely incongruent extension. Including congruent extensions enables the design to (1) replicate the results of one-exposure research and (2) compare consumer reactions to congruent and incongruent extensions after repeated exposure. This strengthens the explanation of process and the study conclusions. Because brand extension congruity/incongruity can arise from multiple sources (Aaker and Keller 1990; Boush and Loken 1991; Broniarczyk and Alba 1994; Meyers-Levy, Louie, and Curren 1994; Park, Milberg, Lawson 1991; Tversky 1977) scales were used, anchored at zero (not unexpected/unsurprising) and six (highly unexpected/extremely surprising), that capture a person's idiosyncratic sources of congruity. This measure is consistent with theory (Bruner and Postman 1949; Mandler 1982) and with incongruity scales used elsewhere (Lane and Jacobson 1997; Meyers-Levy, Louie, and Curren 1994). The brand extensions from the pretest stimuli that were selected for inclusion in the main study are given in Table 1.⁵

⁵Consistent with the findings of prior research, the congruent extensions primarily extended the brand's line—that is, they were in the same category as the flagship product—whereas the incongruent extensions primarily extended to distant product categories. For example, Michelin actually produces bicycle tires. The extension in the present study, all-terrain bicycle tires, represents an extension to the bicycle tire line.

TABLE 1
Pretest of Extension Congruity (n = 23)

Brand	Congruent (Mean)	Incongruent (Mean)	t-Value	p-Value
Heineken	Wheat beer (1.17)	Pretzels (3.17)	3.06	< .006
Crest	Mouthwash (.35)	Chewing gum (2.91)	5.19	< .001
Keebler	Snack bar (.78)	Bottled fruit drink (3.39)	5.77	< .001
Michelin	Bicycle tire (.87)	Sports sandals (4.48)	10.03	< .001

During the next stage of development, actual print advertisements and promotional material currently used by each extending brand were gathered, along with a variety of materials to develop extension images (e.g., a fruit bar, chewing gum, shots of sports sandals, bike tires). These materials were scanned into a computer and manipulated with image-editing software to develop realistic color print advertisements. All advertisements featured extension product shots in the foreground. The copy and pictorial elements in each advertisement were based on actual positioning currently used by each extending brand. Each of the advertisements included both pictorial and verbal elements. Two of the advertisements, those for Heineken and Keebler, presented brand information (e.g., Heineken: green bottle, Heineken label, European; Keebler: elves, hollow tree, Keebler label) that would elicit primarily peripheral associations. The other two advertisements, those for Crest and Michelin, presented brand information (e.g., Crest: fights cavities, the dentist's choice, dental hygiene; Michelin: quality tread, safe, because so much is riding on your tread) that would elicit primarily benefit associations. The only difference between the congruent and incongruent versions was the extension product itself.

Number of Repetitions

Although previous research on message repetition provides some guidance about the appropriate number of repetitions (Anand and Sternthal 1990; Batra and Ray 1986), no research on incongruity or brand extensions was available to guide the decision for this study. However, theory indicates that stimulus complexity and difficulty (Anand and Sternthal 1990) may require more exposures for positive effects to emerge. Moreover, it was intuitively more appealing to space these exposures over time, because consumers would normally encounter promotional materials for a brand extension over time rather than all at once. The choice of five exposures spaced within four sessions reflected these considerations.

Procedure—Main Study

All 109 participants,⁶ whether in the repeated- or one-exposure condition, participated in all four sessions, which were held on consecutive Wednesdays and Mondays or Tuesdays and Thursdays. Several days before the first session, the experimental guise of an "advertising study" was implemented, and preexposure measures were collected. Participants evaluated and listed thoughts that came to mind for a list of brands that included experimental brands.

Participants were randomly assigned to one of four between-subjects experimental conditions: congruent/one exposure, congruent/repeated exposure, incongruent/one exposure, or incongruent/repeated exposure. During the first, second, and third experimental sessions, participants always

viewed either (1) the experimental brand extension advertisements or (2) the placebo print advertisements. These advertisements were intermixed with four guise advertisements (i.e., Lacoste, United Airlines, Mitsubishi, and Levi's). The one-exposure participants saw four placebo advertisements (i.e., Aveda hair product, Kraft Boboli pizza products, Peak 1 backpack, and General Foods International Coffee) in these sessions. The repeated-exposure participants saw four brand extension advertisements, either congruent or incongruent, but not both, during all sessions. Advertisements were randomly ordered across sessions to counter tedium, with the constraint that a guise advertisement was always in the first, third, sixth, and eighth positions. The ordering across subjects was also random. The exposure schedule for experimental/placebo advertisements varied as follows: first session, one exposure of approximately 45 seconds; second session, two exposures of approximately 30 seconds; and third session, one exposure of approximately 45 seconds.

During the fourth session, both the one-exposure and the repeated-exposure participants viewed four brand extension advertisements, either congruent or incongruent, for a one-minute duration. For the one-exposure participants, the original four guise advertisements were intermixed as usual. For the repeated-exposure participants, the four placebo advertisements were intermixed instead of the original guise advertisements so that everyone would see all advertisements (i.e., guise, placebo, and extension) at least once.

In summary, all participants saw four brand extension advertisements (Heineken, Crest, Keebler, and Michelin), all of which were either congruent or incongruent and were viewed either one or five times, as their treatment. After the final exposure and after the collection of advertisement booklets and the distribution of dependent measure booklets, both of which served as distracter tasks, participants completed the dependent measures in the following order: (1) evaluation and usage; (2) thought protocols; (3) incongruity, fit, and beliefs; and (4) demand artifact check.

Dependent Measures

The seven-point evaluation scales were anchored at low quality/high quality, dissatisfying/satisfying, and unappealing/appealing. The usage scales were anchored at never chosen/always chosen, unpreferred/preferred, and rarely used/always used. Thoughts evoked by the advertisement were measured by instructing participants to "write down all of the thoughts [they] had while viewing the advertisement, no matter how relevant or irrelevant." As a manipulation check, the surprising/unexpected scales described in the pretest section were administered. To measure fit/consistency between the extension and brand, two seven-point scales anchored at zero and six—good fit/bad fit and extremely consistent/extremely inconsistent—were included. Participants also completed belief statements of the form "The brand is associated with ..." (e.g., "The Michelin brand is associated with safety").

⁶Participants who were fairly similar to one another were recruited to complete the study. All participants were U.S. citizens who spoke English as their first language. The average age was 23 years; 71% were 22 years of age or younger. Approximately 54% were female. All were recruited from psychology and marketing courses to participate for course credit.

TABLE 2
Congruity Manipulation Check (n = 109)

Brand	Congruent (Mean) ^a	Incongruent (Mean) ^b	t-Value	p-Value
Heineken	Wheat beer (2.19)	Pretzels (3.58)	5.56	< .001
Crest	Mouthwash (1.83)	Chewing gum (3.93)	9.17	< .001
Keebler	Snack bar (1.97)	Bottled fruit drink (4.39)	11.58	< .001
Michelin	Bicycle tire (2.66)	Sports sandals (4.91)	9.69	< .001

^aMeans are based on reactions to congruent extensions from subjects who saw the advertisements for congruent extensions and from subjects who saw the advertisements for incongruent extensions.

^bMeans are based on reactions to incongruent extensions from subjects who saw the advertisements for incongruent extensions and from subjects who saw the advertisements for congruent extensions.

Results—Preliminary Analysis

Thought Coding

Ad-evoked thoughts. Ad-evoked thoughts were collected during the last session of the experiment. Each was classified as either a brand association thought or an extension thought. The preexposure protocols provided guidance as to which thoughts reflected those normally associated with the preexisting brand image. Mentions of the brand name were also categorized as brand association thoughts (Meyers-Levy, Louie, and Curren 1994). Brand associations were further classified as benefit or peripheral. Extension thoughts included thoughts specific to how the extension was portrayed in the advertisement or to the extension product itself. Extension thoughts were also coded to reflect valence, thoughts of fit, and thoughts of incongruity. The measure, net valenced thoughts, was calculated as the difference between positive/fit and negative/inconsistency thoughts (Greenwald 1968; Malaviya, Kisieliu, and Sternthal 1996).

Interrater reliability. All thoughts were coded twice by judges who were blind to the hypotheses. One judge coded all the thoughts. Two other judges split the sample, each coding only that portion of the sample. Interrater reliability was 85% for the ad-evoked thought protocols. Disagreements were resolved through discussion.

Manipulation Checks

Extension congruity manipulation check. The manipulation check of congruity confirmed that the incongruent extensions of the four brand replicates were judged as more surprising and unexpected than their congruent counterparts. Table 2 shows that all differences were large and significant.⁷

⁷The manipulation check provides preliminary evidence that advertisements make a difference. These results indicate that the scaled incongruity responses to both congruent and incongruent extensions vary as a consequence of seeing an actual portrayal of a brand extension. In general, the experimental advertisement subjects judged all extensions as somewhat more unexpected than did the pretest subjects who did not see advertisements but only judged concepts.

Within-subject extension incongruity and brand association manipulation checks. Because of manipulations within the incongruent set of extensions and within each level of ad content, Michelin sports sandals (mean = 4.81) were perceived as significantly more unexpected and surprising than Crest gum (mean = 3.99, paired $t = 3.69$, $p < .001$), and Keebler bottled fruit drink (mean = 4.37) was perceived as significantly more unexpected and surprising than Heineken pretzels (mean = 3.34, paired $t = 4.22$, $p < .001$). This check confirms that extremity of incongruity (INCONGRUENT; two levels: moderately incongruent and highly incongruent) was manipulated within subjects.

Checks on brand beliefs confirmed that the advertisements conformed to the participants' perceptions of the brand's image; that is, Keebler = elves, Crest = dental hygiene, Heineken = green bottle, and Michelin = safety (all means > 5.6, seven-point scale). Furthermore, although each of the advertisements had a variety of elements, manipulation checks revealed that within the incongruent set of extensions, ad content for Heineken (e.g., green bottle, Heineken label, European) and Keebler (e.g., elves, hollow tree, Keebler label) elicited primarily peripheral brand associations, whereas ad content for Crest (e.g., fights cavities, the dentist's choice, dental hygiene) and Michelin (e.g., quality tread, safe, because so much is riding on your tread) elicited primarily benefit brand associations. Within the moderately incongruent set of extensions (Crest gum and Heineken pretzels), participants evoked more benefit brand associations for the Crest advertisement (mean = 1.36) than they did for the Heineken advertisement (mean = .12, paired $t = 7.36$, $p < .001$). Moreover, participants evoked more peripheral brand associations in response to the Heineken advertisement (mean = .33) than they did for the Crest advertisement (mean = .02, paired $t = 3.67$, $p < .001$). Within the highly incongruent set of extensions (Michelin sandals and Keebler bottled fruit drink), participants evoked more benefit brand associations for the Michelin advertisement (mean = 1.06) than they did for the Keebler advertisement (mean = .23, paired $t = 5.27$, $p < .001$). Furthermore, participants evoked more peripheral brand associations in response to the Keebler advertisement (mean = .58) than they did for the Michelin advertisement (mean = .17, paired $t = 3.07$, $p < .003$). These checks support the within-subject

ad content manipulation (ADCONTENT; two levels: peripheral and benefit brand association).⁸

These two within-subjects manipulations (ad content and extremity of incongruity) made it possible to test H_2 and H_3 .

Comparisons of Congruent Versus Incongruent Extensions with One Exposure

The data from the main study were initially analyzed to detect differences between congruent and incongruent extensions with only one exposure. Table 3 provides these between-subject differences pooled across brands. This analysis replicates prior research by finding that when participants viewed advertisements only once, incongruent extensions suffered a disadvantage compared with congruent extensions. At one exposure, participants evaluated congruent (mean = 5.26) more positively than incongruent (mean = 4.21; $t = 4.10$, $p < .001$) extensions, expressed higher usage intentions for congruent (mean = 3.84) than for incongruent (mean = 3.01; $t = 2.56$, $p < .01$) extensions, and indicated more favorable judgments of fit for congruent (mean = 1.91) than for incongruent (mean = 3.45; $t = 7.77$, $p < .001$) extensions. Moreover, with only one exposure, participants listed more total thoughts for incongruent (mean = 6.28) than for congruent (mean = 4.83; $t = 1.80$, $p < .08$) extensions and more negative (less positive) net valenced thoughts for incongruent (mean = $-.33$) than for congruent (mean = $.75$; $t = 3.37$, $p < .002$) extensions.

⁸These comparisons are consistent with those for the whole sample, which includes the congruent extensions. However, because the hypotheses about brand associations evoked by advertisements relate only to the incongruent extensions, the manipulation check is reported for the incongruent extensions.

.08) extensions and more negative (less positive) net valenced thoughts for incongruent (mean = $-.33$) than for congruent (mean = $.75$; $t = 3.37$, $p < .002$) extensions.

Results—Hypothesis Testing

Between-Subjects Hypotheses (H_{1a-e})

H_1 predicts that repeated exposure will affect responses to incongruent extensions. For the incongruent extensions, the between-subjects comparison of one versus repeated exposure, pooled across brands, tests these hypotheses. In support of H_{1a} , the analysis shows that participants evaluated incongruent extensions more positively with repeated exposure than with one exposure ($t = 2.88$, $p < .005$). Moreover, in support of H_{1b} , participants expressed more positive usage intentions after repeated exposure than after one exposure ($t = 2.16$, $p < .03$). Furthermore, consistent with H_{1c} , for the incongruent extensions, repeated-exposure participants expressed improved fit/consistency judgments compared with one-exposure participants ($t = 3.61$, $p < .001$). The process measures also show support. For the incongruent extensions, participants who viewed the brand extension advertisements five times listed more total thoughts than did those who saw the brand extension advertisements only once ($t = 2.06$, $p < .04$). This supports the notion that repeated exposure increases elaboration (H_{1d}). Support for H_{1e} provides additional insight about the nature of thoughts. If elaboration of extensions comes under the direction of brand associations, negatively valenced thoughts and thoughts of inconsistency evoked by incongruent extensions should give way to thoughts of fit/consistency and

TABLE 3
Mean Responses Pooled Across Brands ($n = 109$)

	Congruent		Incongruent	
	One Exposure $n = 20$	Five Exposures $n = 22$	One Exposure $n = 30$	Five Exposures $n = 37$
Extension evaluation	5.26 (.64)	5.16 (.68)	4.21 (1.01)	4.87 (.86)
t-test (one versus five)	$t < 1$		$t = 2.88$, $p < .005$	
Extension usage intentions	3.84 (1.00)	4.00 (1.10)	3.01 (1.21)	3.61 (1.08)
t-test (one versus five)	$t < 1$		$t = 2.16$, $p < .03$	
Extension consistency judgments ^a	1.91 (.67)	1.83 (.87)	3.45 (.70)	2.83 (.70)
t-test (one versus five)	$t < 1$		$t = 3.61$, $p < .001$	
Total ad-evoked thoughts	4.83 (2.19)	5.38 (2.07)	6.28 (3.11)	7.91 (3.30)
t-test (one versus five)	$t < 1$		$t = 2.06$, $p < .04$	
Net valenced thoughts	.75 (.82)	.18 (1.11)	-.33 (1.27)	1.58 (1.43)
t-test (one versus five)	$t = 1.86$, $p < .07$		$t = 5.71$, $p < .001$	

^aLower values represent better fit.

Notes: Standard deviations are in parentheses.

other positive extension thoughts after repeated exposure to advertisements. In support of H_{1c} , for incongruent extensions, net valenced thoughts were more positive for five-exposure participants than for one-exposure participants ($t = 5.71, p < .001$). These results supporting H_1 are consistent with the idea that repeated exposure improves consumers' responses to incongruent extensions through elaborative processing.

Within-Subjects Hypotheses (H_2 – H_3)

H_2 and H_3 predict that the between-subjects ad repetition factor (REPEAT) will differentially affect participants' responses within the incongruent extensions conditions because of variation in (1) the extremity of incongruity (INCONGRUENT) and (2) ad content (ADCONTENT). Both the extremity of incongruity and the ad content were manipulated within subjects who were all exposed to all the incongruent extension advertisements either once or repeatedly. Heineken pretzels and Crest gum operationalized the moderately incongruent level, whereas Keebler bottled fruit drink and Michelin sandals operationalized the highly incongruent level. The Heineken pretzels and Keebler bottled fruit drink advertisements operationalized the peripheral association ad content manipulation, whereas the Crest gum and Michelin sandals advertisements operationalized the benefit association ad content manipulation. Tests of H_2 and H_3 require analysis of and comparison within the subset of data that includes the incongruent extensions ($n = 67$), as is specified in Table 4 and discussed subsequently.

H_{2a} and H_{3a} . The significant three-way REPEAT $\times$ INCONGRUENT $\times$ ADCONTENT interaction ($F_{1,65} = 3.99, p < .05$) from the repeated-measures multivariate analysis of variance (MANOVA) of incongruent extension evaluation supports H_{2a} and H_{3a} . This result is bolstered by the comparison of specific brand means across levels of exposure. H_{2a} predicts that for moderately incongruent extensions, both peripheral association and benefit association advertisements will lead to greater extension evaluation after repetition. In support of this, both the Heineken peripheral advertisement ($t = 2.80, p < .007$) and the Crest benefit advertisement ($t = 2.17, p < .03$) are associated with significantly more positive evaluations with five than with one exposure. H_{3a} predicts that for highly incongruent extensions, the benefit association advertisement, but not the peripheral association advertisement, will result in significantly greater extension evaluations with repetition. Consistent with this, repeated exposure is associated with significantly greater extension evaluations for the Michelin benefit association advertisement ($t = 2.76, p < .007$) but not for the Keebler peripheral association advertisement ($t = 1.01, p > .32$).

H_{2b} and H_{3b} . The three-way REPEAT $\times$ INCONGRUENT $\times$ ADCONTENT interaction from the repeated-measures MANOVA of incongruent extension usage intentions is also near significance ($F_{1,65} = 3.62, p < .06$), which supports H_{2b} and H_{3b} . This result is supported by the individual brand comparisons across levels of repetition. H_{2b} predicts that for moderately incongruent extensions, both benefit and peripheral association advertisements will lead to greater

TABLE 4
Incongruent Extensions Individual Brand Hypothesis Tests

Level of Incongruity	Moderate				High			
	Peripheral (Heineken)		Benefit (Crest)		Peripheral (Keebler)		Benefit (Michelin)	
Ad Content	One (n = 30)	Five (n = 37)	One (n = 30)	Five (n = 37)	One (n = 30)	Five (n = 37)	One (n = 30)	Five (n = 37)
Exposure Repetition								
Extension evaluation	4.29 (1.41)	5.14 (1.09)	4.43 (1.19)	5.02 (1.02)	4.03 (1.03)	4.32 (1.27)	4.09 (1.43)	5.00 (1.27)
t-test (one versus five)	$t = 2.80, p < .007$		$t = 2.17, p < .03$		$t = 1.01, p > .315$		$t = 2.76, p < .007$	
Extension usage intentions	3.13 (1.45)	3.79 (1.30)	3.21 (1.35)	3.89 (1.44)	3.03 (1.17)	3.16 (1.31)	2.64 (1.48)	3.59 (1.36)
t-test (one versus five)	$t = 1.96, p < .05$		$t = 1.98, p < .05$		$t = .42, p > .67$		$t = 2.73, p < .008$	
Extension consistency judgments ^a	2.77 (1.80)	1.95 (1.32)	2.70 (1.48)	2.30 (1.14)	4.13 (1.36)	3.70 (1.31)	4.20 (1.47)	3.36 (1.40)
t-test (one versus five)	$t = 2.15, p < .04$		$t = 1.26, p > .2$		$t = 1.31, p > .19$		$t = 2.38, p < .02$	
Total ad-evoked thoughts	6.67 (3.66)	7.31 (3.16)	6.03 (3.45)	7.86 (4.26)	6.13 (2.97)	7.56 (3.64)	6.27 (4.35)	8.92 (4.59)
t-test (one versus five)	$t = .76, p > .45$		$t = 1.89, p < .06$		$t = 1.71, p < .09$		$t = 2.39, p < .02$	
Net valenced thoughts	.20 (2.62)	2.25 (2.40)	.17 (2.80)	2.47 (2.83)	−1.03 (2.25)	−.33 (2.65)	−.67 (2.64)	1.94 (2.85)
t-test (one versus five)	$t = 3.32, p < .001$		$t = 3.31, p < .002$		$t = 1.14, p > .25$		$t = 3.83, p < .001$	

^aLower values represent better fit.

Notes: Standard deviations are in parentheses.

extension usage intentions after repeated exposure. Consistent with this, both the Crest replicate ($t = 1.98, p < .05$) and the Heineken replicate ($t = 1.96, p < .05$) are individually significant. H_{3b} predicts that for the highly incongruent extensions, the benefit association advertisement, but not the peripheral association advertisement, will lead to higher usage intentions after repeated exposure. In support of this, the Michelin replicate ($t = 2.73, p < .008$), but not the Keebler replicate ($t = .42, p > .67$), is significant.

H_{2c} and H_{3c} . The tests of judgments of fit are generally consistent with the differences in evaluations and usage intentions. H_{2c} predicts that for moderately incongruent extensions, judgments of fit will increase with repetition for both benefit and peripheral advertisements. Individual brand comparisons provide only partial support for this hypothesis. Although the between-subjects effect of REPEAT for all incongruent extensions is significant, within the moderately incongruent pair, only the Heineken replicate shows individual significance ($t = 2.15, p < .04$). The Crest benefit advertisement does not reach significance ($t = 1.26, p > .2$). This limited support for H_{2c} is explored in the Discussion section. Although the failure of Crest to reach significance conflicts with H_{2c} , the direction of the means is consistent with the hypothesis. Moreover, H_{3c} is supported. For highly incongruent extensions, repetition is associated with increased fit/consistency for the benefit association advertisement (Michelin $t = 2.38, p < .02$) but not for the peripheral association advertisement (Keebler $t = 1.31, p > .19$). However, it should be noted that the direction of means is consistent with some improvement in fit judgments after repetition for the Keebler extension.

H_{2d} and H_{3d} . The process measure, net valenced thoughts, also supports the evaluation and usage intention results. The pattern of differences between means for the individual brands conforms to that hypothesized in H_{2d} and H_{3d} . In support of H_{2d} , for moderately incongruent extensions, both the benefit association advertisement (Crest: $t = 3.31, p < .002$) and the peripheral association advertisement (Heineken: $t = 3.32, p < .001$) show significant differences between one and repeated exposures. In support of H_{3d} , for highly incongruent extensions, the benefit association advertisement (Michelin: $t = 3.83, p < .001$), but not the peripheral association advertisement (Keebler: $t = 1.14, p > .25$), shows a significant difference between one and repeated exposures. It is also interesting to note that for the moderately incongruent extensions, net thoughts are somewhat positive at one exposure but become even more positive with repeated exposure. That is not the case for highly incongruent extensions. Both start out negative, but the peripheral association advertisement (Keebler) remains negative, whereas the benefit association advertisement (Michelin) becomes positive with repeated exposure.

Discussion

This research contributes to the brand equity literature by demonstrating that repeated exposure to brand extension advertisements influences consumer responses to incongruent extensions but that this relationship is attenuated for highly incongruent extensions when ad content evokes

peripheral brand associations rather than benefit brand associations.

A substantial research stream has surmised that consumers' initial perceptions of brand extension fit are a key factor that limits the extension's acceptance. This study contradicts that conclusion by demonstrating that extension consistency is not a fixed property. Instead, consistency judgments are dynamic; they, along with evaluations and usage intentions, do change with ad repetition. Indeed, after repeated exposure, congruent extensions are not always evaluated substantially more highly than incongruent extensions. The only brand whose congruent extension was still evaluated significantly more highly than the incongruent extension after repeated exposure was Keebler ($t = 3.91, p < .001$; all other t -values are nonsignificant). Given these findings, this research challenges the view that consumers' initial perceptions of extension consistency restrict brand stretch.

The study also sheds light on the psychological processes that underlie these changes in perceptions. The findings show that repeated exposure to ad content influences what is elaborated, the amount of elaboration, and the valence of elaboration. Consistent with previous findings about ad repetition, as a result of multiple exposures to advertisements for incongruent extensions, positive extension thoughts and thoughts of extension consistency eventually overcame negative thoughts and thoughts of inconsistency. Why did the valence of thoughts change with repeated exposure? The results are concordant with the following assimilation explanation: During the first exposure to an incongruent extension, the incongruity was highly salient, attracted cognitive resources, and substantially influenced judgments. However, multiple exposures to the advertisements reinforced other ad-evoked brand associations that formed the basis for perceptions of consistency between the extension and the brand. These ad-evoked brand associations continued to direct the increased elaboration that accompanied repeated exposure. As a result, negative and inconsistent extension cognitions receded while positive and consistent cognitions surfaced.

Although these results indicate that all incongruent extensions benefited somewhat from repeated exposure to advertisements, the advertisements varied in efficacy. Specifically, advertisements that evoked either peripheral or benefit brand associations boosted consumer perceptions of moderately incongruent extensions, but an advertisement that evoked primarily peripheral brand associations did not improve consumer perceptions of highly incongruent extensions as much as did an advertisement that evoked primarily benefit brand associations.

For Keebler bottled fruit drink, a highly incongruent extension, the peripheral associations evoked by the advertisement did not appear to provide participants with an adequate understanding of how the extension fit with the brand, even after repeated exposure. Although total thoughts increased, net valenced thoughts remained negative regardless of whether participants saw the advertisement once or repeatedly. Negative thoughts of incongruity continued to dominate in spite of the peripheral basis of fit portrayed in the advertisement. Therefore, overall judgments of incongruity did not substantially change. Subsequently, evaluations and

usage intentions for Keebler bottled fruit drink did not significantly improve with repeated ad exposure. In contrast to the Keebler result, positive thoughts, judgments of fit, evaluations, and usage intentions for Michelin sandals did improve significantly along with the higher elaboration brought on by ad repetition. These contrasting results between Michelin sandals and Keebler bottled fruit drink occurred even though participants judged both extensions as extremely unexpected and surprising. However, they differed from each other in that the Michelin sandals advertisement evoked primarily benefit brand associations and the Keebler bottled fruit drink advertisement evoked primarily peripheral brand associations. The heightened elaboration brought on by message repetition reinforced benefit associations in the case of Michelin and peripheral associations in the case of Keebler. Yet only benefit brand associations provided a sufficient basis for consistency between incongruent extension and brand. With the bolstering of Michelin's benefit associations brought on by ad repetition, thoughts of fit successfully competed with initial thoughts of incongruity. As the repeated consideration of benefit brand associations skewed thoughts toward positive perceptions of fit and away from negative perceptions of incongruity, judgments of overall extension fit also improved. With better fit, extension evaluations and usage intentions increased.

A different story emerges for moderately incongruent extensions. For these extensions, repeated exposure to an advertisement that evoked peripheral brand associations worked just as well as exposure to an advertisement that evoked benefit brand associations. Both Crest gum and Heineken pretzels were judged as moderately incongruent. However, they differed in that the Crest gum advertisement evoked primarily benefit brand associations whereas the Heineken pretzel advertisement evoked primarily peripheral brand associations. Yet in spite of this difference in ad-evoked brand associations, consumers' responses improved for both with repeated exposure. Even the peripheral associations the Heineken advertisement evoked were sufficient to alter thoughts such that they became more positive and provided a basis of fit between Heineken and the moderately incongruent pretzels extension. Consequently, participants' fit judgments, evaluations, and usage intentions improved considerably.

These divergent effects are consistent with the idea that the increased elaboration that accompanies ad repetition does not by itself drive the improvement in consumer responses to incongruent extensions. In addition to repeated exposure, ad content does make a difference. The specific associations ad content brings to mind are critical, because these associations direct what is elaborated and therefore the inferences that consumers make about an extension as they repeatedly encounter the advertisements. For highly incongruent extensions, advertisements that evoke benefit brand associations, which direct the consumer to a need-based perception of consistency, appear to have a greater ability to influence consumer responses with repeated exposure. Peripheral associations may not provide enough meaningful association between an extremely incongruent extension and a brand for significant associative learning to occur. As

Shimp (1991) points out, a conditioned stimulus (incongruent extension) usually must somehow belong or fit with the unconditioned stimulus (brand) for conditioning to occur. Whereas moderately incongruent extensions appear to offer an adequate basis of fit such that they benefit from the conditioning processes peripheral brand associations evoke, highly incongruent extensions do not.

This research builds on the growing brand equity literature that accentuates the importance of consumers' favorable and distinctive mental associations in determining the brand's equity with consumers (Aaker 1996; Keller 1993; Park, Jaworski, and MacInnis 1986). Past researchers have shown that brand associations are valuable, in part, because they provide a launching board into new markets. Because of these associations, consumers can see a product category fit (Aaker and Keller 1990; Boush and Loken 1991), understand a more abstract basis of fit (Park, Milberg, and Lawson 1991), or infer the extension's benefit (Broniarczyk and Alba 1994). Moreover, when a firm strategically alters its brand image by enhancing associations of company credibility or broadening the product categories with which the brand is associated, consumers' judgments of extensions improve, apparently reflecting these new brand associations (Keller and Aaker 1992). One important contribution of the present study is the demonstration that stretch into distant extension markets does not require that the brand image undergo prior change through drastic product line augmentation or quality enhancement. Indeed the brand image need not change at all before the introduction of an incongruent extension. Instead, this study shows that managers can influence extension perceptions through communication strategies, specifically by directing ad content and repetition. Advertisements heighten the salience of selected brand associations and thereby influence what consumers think about when they encounter an incongruent extension. That is, advertisements determine which elements of a brand's image position the extension in consumers' minds and aid them in comprehending how the extension fits. Whereas a brand may conjure up a core concept that is strongly held by a particular consumer segment, an advertisement can focus collective attention on key brand associations that guide extension contemplation. As the extension gains exposure in the market, this guided consumer reflection ultimately leads to better understanding of brand extension fit and thereby to enhanced evaluations and usage. These findings indicate that a preexisting brand, unaltered by intervening product strategies, has the capacity to stretch further than conventional wisdom suggests.

This study also raises questions about the long-term benefits a brand brings to the extension market. Does a brand extension that is initially perceived as more consistent than a competitive extension continue to enjoy an evaluative edge over time? This research suggests that the difference in consumer reactions to congruent versus incongruent extensions eventually erodes. This raises the strategic question whether other consumer brand equity factors better withstand the test of time in extension markets. For example, brand affect, brand awareness, and/or attitude strength may provide better long-term protection against competitors than extension fit does. Likewise, brand associations that help

overcome inconsistency in extension markets may shore up the competitive arsenal, because as these associations become more salient, consumers redefine how they evaluate competitive offerings (Broniarczyk and Alba 1994). For example, the introduction of Michelin sandals with an advertisement that emphasizes safe tread may increase the value consumers place on this feature. Because Michelin has a long history of promoting this benefit, competitors suffer a distinct disadvantage that is difficult to overcome.

Another interesting issue raised by this study is consumer perceptions of fit. It is quite possible that some extensions are so extremely incongruent (e.g., Godiva computers) that repeated exposure will not alter consumer responses, no matter what brand associations are evoked by the advertisement. The extension's inherent incongruity may set an upper bound on perceived fit, even in the case in which the extension seems feasible. Perhaps for some extensions, perceptions of incongruity will always counter perceptions of fit to some extent, erecting a barrier beyond which extension fit will not improve. This may have been the case for Crest. Crest gum did improve in consistency with repeated exposure, but not significantly so. It could be that moving the fit of Crest gum beyond some ceiling was difficult because the associations, or lack thereof, that provide the basis of incongruity did not completely disappear. Therefore, the associations continued to exert some influence even after repeated exposure. It is interesting to note that in spite of the relatively small improvement in fit, Crest gum did improve on all other measures, including evaluations and usage intentions. It could be that the dental hygiene benefit overshadowed participants' skepticism about the overall fit between Crest and gum.

Although this research illustrates several important findings, it is not without limitations. First, the results do not indicate that repeated exposure is always required for improvement in consumer responses to incongruent extensions. If an advertisement convincingly illustrates how the extension satisfies an important and relevant need and/or consumers continue to elaborate on the ad content over time, an advertisement may sway consumers with one exposure. Second, the brands in this study were well established and highly regarded brands. Therefore, the findings do not generalize to disliked or mediocre brands. Third, this study cannot conclude that advertisements that evoke peripheral brand associations never substantially alter consumer perceptions of highly incongruent extensions. With higher levels of repetition, these advertisements may prove effective. Fourth, this study does not differentiate between types of brand concepts—functional, symbolic, and experiential

(Park, Jaworski, and MacInnis 1986). Given the greater one-exposure stretch associated with symbolic compared with functional brands (Park, Milberg, and Lawson 1991), research that explores the impact of repetition on each type of brand concept should prove enlightening. Each of these limitations provides opportunities for future exploration.

This study also raises several questions regarding ad content's influence on consumer reactions to brand extensions. For example, research that explores the relative role of an advertisement's pictures (words) in evoking peripheral (benefit) brand associations could help managers determine appropriate ad content. In addition, research that examines how peripheral or benefit ad-evoked brand associations interact with the peripheral or benefit nature of the product category with which a brand is initially associated and/or to which it is extended could shed light on how to improve consumer reactions to brand extensions. In this study, the peripheral ad content was associated both with original product categories (e.g., Keebler snacks and Heineken beer) and extension product categories (e.g., bottled fruit drink and pretzels) that frequently rely on peripheral appeals. If both the extending brand's advertising appeal and that normally encountered for the extension product category are peripheral, this match provides a source of potential fit. Yet it also seems plausible that a peripheral brand will extend more successfully to a product category in which competing brands traditionally advertise their product's benefits. The peripheral associations that the extending brand has established may provide a point of differentiation that consumers desire in the extension product and thereby a defensible position in that market. Similarly, a brand's benefits may provide for a unique position in extension product categories in which competing brands typically depend on peripheral appeals.

Conclusion

This study has important implications for brand management. The results suggest some good news for managers by indicating that brands have more inherent stretch than prior research would suggest. With repeated exposure to advertisements that evoke appropriate brand associations, consumers eventually respond substantially more favorably to incongruent extensions than they do at first exposure. Moreover, this increased favorability puts these incongruent extensions much closer to par with congruent extensions. This suggests that first exposure judgments of extension consistency should not make or break a brand expansion decision; one-exposure concept testing may mislead.

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Slotting Allowances and Fees: Schools of Thought and the Views of Practicing Managers

Slotting allowances and fees have attracted considerable attention and controversy since their introduction in the mid-1980s. Currently, two schools of thought dominate the debate on these fees. One considers them a tool for improving distribution efficiency, whereas the other proposes that the fees operate as a mechanism for enhancing market power and damaging competition. Managers and public policymakers are uncertain as to the effects of slotting fees and the appropriate strategy to adopt. The current study attempts to inform the debate surrounding slotting fees and provide guidance to managers and policymakers. The authors summarize the arguments of the two schools and investigate the views of managers toward them through a large-scale survey of manufacturer, wholesaler, and retailer grocery institutions. Though exploratory, the findings suggest that slotting fees shift the risk of new product introductions and help apportion the demand and supply of new products. The authors find that slotting fees are also associated with the exercise of retailer market power, are applied in a discriminatory fashion, and lead to higher retail prices. The authors encourage further research that examines slotting fees and their effects and indicate prospective directions.

The terms *slotting allowances* and *slotting fees* describe a family of marketing practices that involve payments by manufacturers to persuade downstream channel members to stock, display, and support new products. Table 1 describes various types of these fees. Slotting fee payments are usually negotiated in secrecy and required up front without public disclosure of their terms. Hardly known before the mid-1980s, they have recently attracted widespread attention and sparked considerable controversy. They now represent a significant cost to grocery manufacturers, and reports indicate they are becoming more widely used in other industries (e.g., computer software, compact discs, books, magazines, apparel, over-the-counter drugs, tobacco products). In the grocery industry, estimates suggest that slotting fees account for up to \$9 billion in annual promotional expenditures, or approximately 16% of all new product introduction costs (Deloitte & Touche 1990), and per-item store costs approximate \$5,000 to \$25,000 (Lucas 1996).

Two schools of thought currently dominate the debate on slotting fees. One views them as a tool for improving distribution efficiency and stimulating competition, and the other considers them a tool for enhancing market power and damaging competition. Retailers generally hold the former

view, whereas manufacturers tend to subscribe to the latter. Proponents of slotting fees contend that these fees improve the efficiency of channel distribution systems, because manufacturers use them to signal product quality and retailers rely on them to screen new products. Efficiency is also seen in the way that these fees can lead to more productive cost and risk sharing between manufacturers and retailers, better shelf-allocation decisions, and more effective apportionment of the supply and demand for new products. From this perspective, slotting fees are viewed as ultimately enhancing competition among highly efficient channel systems and lowering consumer prices in the process.

In contrast, opponents of slotting fees charge that the fees represent an unfair abuse of power by large retailers. Critics claim that large retailers use these fees to gain a competitive advantage over smaller rivals, as well as to discriminate among suppliers in a way that favors larger manufacturers. Proponents of this view argue that slotting fees damage channel relationships, hurt competition among both retailers and manufacturers, and create less product variety and higher consumer prices.

The slotting fee debate is similar to other prominent issues in marketing and economics. The long-standing controversy over the economic effects of advertising has generated similar discourse (Albion and Farris 1981). In both debates, discussion revolves around whether (1) large promotional expenditures in support of a product may be interpreted as a signal of quality by retailers and/or consumers (Albion and Farris 1981), (2) large manufacturers obtain more support or benefits from retailers (or the advertising media) per promotional dollar spent than do small manufacturers (Albion and Farris 1981), and (3) promotional expenditures are used as a means of excluding competitors. The debate is also similar to the controversy that exists over the effects of channel control initiatives (Stern and Eovaldi

Paul N. Bloom is Professor of Marketing, Kenan-Flagler Business School, University of North Carolina. Gregory T. Gundlach is Associate Professor of Marketing, College of Business Administration, University of Notre Dame. Joseph P. Cannon is Assistant Professor of Marketing, College of Business, Colorado State University. The authors are listed in random order and contributed equally to the article. Each acknowledges the financial support of the Marketing Science Institute and thanks his department and colleagues for providing support and suggestions. The authors also thank Dawn Browne and Donna Ruggaber for their assistance with data collection.

TABLE 1
Slotting Allowances and Fees

Type of Fees	Description
Presentation fees	Fees paid for the privilege of making a sales presentation.
Slotting fees	Up-front payments of cash, promotional dollars, or merchandise to obtain shelf space for a product.
Display fees	Fees paid for special merchandising and display of products.
Pay-to-stay fees	Fees paid to continue stocking and displaying a product.
Failure fees	Fees paid when a product does not meet expected goals.

1984). Related questions arise when the ways in which channel coordination and market efficiency are affected by tying agreements, exclusive dealing, exclusive territories, resale price maintenance, or slotting fees imposed by a powerful channel member are considered.

Resolution of the slotting fee debate has important implications for public policy and channel management. To date, these fees have proved to be a difficult issue for the Federal Trade Commission, the Department of Justice, and many state attorneys general offices. On the basis of public statements, these antitrust enforcement agencies have given serious consideration to the possibility that slotting fees are illegal under the antitrust laws (see Bureau of National Affairs 1994; Commerce Clearing House 1991; Harps and Thayer 1997; Kiley 1990; McCabe 1996; Redman 1995; Sackovich 1998). However, no enforcement actions have been taken so far. Moreover, no private antitrust suits have produced a definitive judicial decision for slotting fees. One federal regulatory agency, though, has taken a strong stance against slotting fees. The Bureau of Alcohol, Tobacco and Firearms promulgated a rule in 1995 that prohibits these fees in the marketing of alcohol beverages (Gundlach and Bloom 1998).

For channel participants, slotting fees are a significant source of unresolved conflict that hampers efforts to develop and implement relationship-based practices as a source of competitive advantage. In the grocery channel, for example, attempts to develop and implement strategies of efficient consumer response (ECR) have been hampered by the acrimony over slotting fees. Conflict over these fees continues to be an industry concern.

This article adds to the growing literature on slotting fees. We adopt an exploratory approach, summarizing the previous literature and drawing on the results of a large-scale survey of grocery industry managers to provide insight. Thus far, most academic work has consisted of (1) legal analyses of how various statutes might treat slotting fees, (2) other public policy-related analyses, or (3) analytic efforts in which the potential effects of slotting fees are modeled. The Appendix summarizes these contributions. Notably missing is empirical research.¹ Our study contributes

to this literature and therefore the debate over slotting fees through a survey of managers involved in the practice.

Schools of Thought

Discussions of slotting fees in the academic literature and the trade press typically adopt one of two schools of thought. These schools are summarized in Tables 2 and 3 and are more fully explained subsequently. Key research questions are included in the tables and provide the basis for our empirical study.

The Efficiency School

This school argues that slotting fees enhance the efficiency of new product distribution by serving as a means for signaling and screening new products and as a basis for achieving efficient cost sharing and risk shifting among manufacturers and retailers. Slotting fees are also thought to lead to more efficient shelf space allocation and demand/supply apportionment. Finally, efficiency school proponents claim that slotting fees provide competitive efficiencies as a facilitating practice for lowering retail prices. Each of these perspectives, as found in the literature, is described subsequently.

Signaling and screening. A key argument in favor of slotting fees is that they provide efficiencies to the process of new product introduction by (1) helping manufacturers communicate information to retailers regarding the likely success of product innovations and (2) helping retailers evaluate this information (Chu 1992; Kelly 1991; Lariviere and Padmanabhan 1997; Messinger and Chu 1995; Sullivan 1997; Toto 1990). Because of differing channel positions and market objectives, as well as other products vying for a retailer's interest, manufacturers are faced with the difficult task of convincing retailers of the probable success of their new products. This problem primarily concerns how to communicate, in a credible manner, information the manufacturer knows about its product. Retailers face difficulties in their assessment of this information, and their challenge is how to evaluate effectively the information provided.

As signaling and screening mechanisms, slotting fees are argued to help manufacturers credibly distinguish the product innovations they believe will be successful from those they do not and to help retailers effectively evaluate such distinctions. The offer to pay a slotting fee communicates or signals that the manufacturer has sufficient confi-

¹For an exception employing secondary data, see Sullivan (1997). For recent industry surveys, see Partch and De Santa (1997), *Progressive Grocer* (1996), *Supermarket Business* (1997), and Thayer (1997). For academic research indirectly addressing slotting fees, see Rao and McLaughlin (1989).

TABLE 2
Slotting Fees: The Efficiency School of Thought

Perspective	Description	Research Questions
Signaling and screening	Slotting fees enable manufacturers to communicate and retailers to evaluate information regarding new products.	Do slotting fees help communicate information regarding new products? Can they signal the potential success of a new product? Can they aid in screening out risky products?
Cost sharing	Slotting fees compensate retailers for the increasing costs of introducing and managing new products.	Do slotting fees enable new product costs to be equitably shared among channel members? Have new product costs contributed to the use of slotting fees? Do these fees cover the new product costs incurred by retailers?
Risk shifting	Slotting fees help reallocate the risks of new product introductions to those best informed to control them.	Do slotting fees help efficiently allocate new product risks? Have they lowered the risk for retailers? Have they increased the risk for manufacturers?
Shelf space allocation	Slotting fees enable retail shelf space to be allocated to its best possible use.	Do slotting fees enable shelf space to be efficiently allocated? Are slotting fees simply a bid for shelf space rental? Are retail product assortment decisions based on slotting fees?
Demand/supply apportionment	Slotting fees help equate the supply of new products and their demand by consumers.	Do slotting fees help apportion an oversupply of new products with a less-than-commensurate demand for them? Has new product proliferation led to slotting fees? Has a lack of perceived product innovation by consumers led to slotting fees?
Facilitating practice for lowering retail prices	Slotting fees provide a means for increasing retail competition.	Do slotting fees help lower retail prices? Have prices decreased as a result of slotting fees?

dence in the success of its new product that it is willing to absorb the cost of the fee. Manufacturers are assumed to be able to recoup such payments for successful innovations, but not for product failures. Retailers may require slotting fees and then observe the magnitude of payment or nonpayment to evaluate the credibility of information manufacturers provide and screen out potentially unsuccessful products. By setting slotting fees high enough so that only manufacturers that pay them are those confident they can recover the fees, a retailer is argued to be better able to identify successful new products.

Cost sharing. Proponents of slotting fees also contend that slotting fees compensate retailers for the increasing costs of introducing and managing a proliferation of new products that are argued to be neither adequately researched nor supported by manufacturers (Lariviere and Padmanabhan 1997; Toto 1990). Retailers assert that manufacturers should share in these costs. Manufacturers disagree, claiming that the actual amounts paid for slotting fees often bear little relation to actual new product costs.

Retailers tend to view slotting fees as covering the elevated costs of overhead, warehousing, personnel, and computer time, plus the opportunity costs of forgoing more profitable products, including private label brands. Although few data are available, research suggests that retailers incur significant costs when they introduce new products. A key question is whether slotting fees actually reflect these costs. One study by Deloitte & Touche (1990) indicates that, on a per-stockkeeping unit (SKU)

basis, costs (exclusive of opportunity costs) average \$13.51 per store, and costs to delete an item average \$10.77. This study also found per-store slotting fees to average \$36.34.

Risk shifting. Another efficiency argument in support of slotting fees is that they help shift the risk of new product acceptance away from retailers and back to manufacturers, which are assumed to be in a better position to control this risk through research and support (Kelly 1991; Sullivan 1997; Toto 1990). This view is based on the classic economic principle that exchange enables parties to allocate risk efficiently in a manner beneficial to both. In theory, market exchanges lead to the allocation of risk to those best able, in a cost sense, to control it. One factor influencing the level of risk is information. If one firm possesses more information than another, the former firm is assumed to be in a better position to control the risk. In the absence of restrictions, economic theory predicts that market exchange will allocate risks to those with more information.

With regard to new products and their risk of failure, the contention is that manufacturers—as the source of product innovation—are more informed. Therefore, in theory, they should bear more risk than retailers in the introduction of a new product. Given the nature of distribution channels, however, the risk of new product introduction is often borne more heavily by the retailers. Slotting fees are argued to be a mechanism for efficiently reallocating some of this risk back to manufacturers.

TABLE 3
Slotting Fees: The Market Power School of Thought

Perspective	Description	Research Questions
Exercise of market power by retailers	Slotting fees reflect the exercise of acquired market power on the part of retailers toward manufacturers.	Do slotting fees reflect the exercise of market power? Have these fees provided retailers with influence over manufacturers? Manufacturers over retailers? Are larger retailers better able to require slotting fees than smaller firms? Have they earned greater profits from these fees?
Channel relationships	Slotting fees have damaged manufacturer and retailer relationships, leading to concerns for channel efficiency.	Do slotting fees undermine cooperation in the marketing channel? Have slotting fees reduced the flow of information between firms? Have they affected manufacturer marketing support and/or consumer-directed promotion?
Discrimination	Slotting fees enable retailers to discriminate among manufacturers, particularly large versus small firms.	Do slotting fees serve as a mechanism for discrimination by retailers? Do all manufacturers pay the same amount? Are fees negotiated? Are smaller manufacturers affected more than larger manufacturers?
Competitive foreclosure	Slotting fees are a competitive mechanism that enables larger and more resourceful competitors to foreclose smaller rivals from access to required inputs, such as retail shelf space.	Do slotting fees enable larger and more resourceful manufacturers to undermine the competitive survival of their rival firms? Have slotting fees differentially affected the number of new products introduced and the innovativeness of new products by larger versus smaller manufacturers? Have some manufacturers sought alternative channels for their products as a result of slotting fees? Have some exited the industry? Have good products been foreclosed from the marketplace?
Facilitating practice for raising retail prices	Slotting fees provide a means for diminishing retail competition.	Do slotting fees increase prices? Have prices increased as a result of slotting fees?

Shelf space allocation. Advocates of slotting fees also contend that these fees enable a scarce retail resource, namely, shelf space, to be allocated to its best possible use (Toto 1990). Under this view, shelf space is considered a commodity, and manufacturer-paid slotting fees are considered an auction-like bid for the “rental” of such space. The assumption is that the manufacturer that tenders the highest bid is also in the best competitive position to generate the greatest shelf space returns by providing products in the form and variety most desired by consumers. Retailers basing product assortment decisions on which manufacturers are willing to pay higher slotting fees are therefore argued to be allocating shelf space in a way that optimizes consumer utility.

Demand/supply apportionment. Still another efficiency-based argument is that slotting fees help equate an oversupply of new products with a less-than-commensurate consumer demand for them (Sullivan 1997). Two key contentions of this view are that product proliferation has led to an oversupply of new products compared with their marketplace demand and that many of these new products lack true innovation. Under such circumstances, slotting fee payments are argued to induce retailers to accept new products they would reject otherwise because of their belief that the additional costs of offering the new product will not be offset by incremental revenue.

The costs of adding new products at the retail level involves the one-time inventory and shelving costs as well as subsequent carrying, restocking, and reordering costs. If these costs are accompanied by consumers seeking innovation or consumers benefiting from the added variety and lower search costs of truly new products, enhanced sales and the ability to charge higher prices enable retailers to recover these costs. If, however, enhanced sales do not occur or if consumers are not willing to pay a price premium, these costs are more difficult to recover. Under such circumstances, retailers are argued to resist adding new products in the absence of additional incentives, such as slotting fees.

Facilitating practice for lowering retail price. A final efficiency argument characterizes slotting fees as a mechanism for lowering retail prices. Under this view, the up-front payment of slotting fees is characterized as unbundling the cost of shelf space from the product transaction (see Sackovich 1998). This unbundling is argued to effectively reduce the unit price paid by retailers for new products, enabling them to compete more aggressively in their pricing downstream, which results in lower consumer prices. It is also suggested that the efficiencies obtained through slotting fees in screening, cost sharing, risk shifting, and shelf space allocation permit more aggressive competition and therefore lower prices.

The Market Power School

Opponents of slotting fees are not persuaded by claims of competitive efficiencies for slotting fees but rather regard these fees as enhancing market power and diminishing competition. According to this school, slotting fees are argued to be an exercise of retailer market power in the market channel that undermines channel relationships and leads to retail discrimination. Slotting fees are also argued to damage manufacturer competition through their use as a strategy of competitive foreclosure. Finally, slotting fees are claimed to diminish retail competition by serving as a facilitating practice for increasing retail prices. Each of these perspectives, as found in the literature, is explained below and summarized in Table 3, which also contains relevant research questions.

Exercise of retailer market power. Opponents of slotting fees point to their use in the context of increasing retailer power and influence (Chu 1992; Lariviere and Padmanabhan 1997; Messinger and Chu 1995; Sullivan 1997; Toto 1990). Power in this case refers to the ability to set prices at other-than-competitive levels. Control over price is claimed to be exercised and exploited by retailers by instituting slotting fees for accepting new products, providing shelf space, or supplying other services to manufacturers.

A critical assumption is that retailers have obtained increased power in their relationships with upstream channel members. In support of this assumption, opponents of slotting fees contend that through consolidation, technological advancements, and new product proliferation, grocery retailers have acquired increasing market clout. The large number of retail mergers is cited as one factor contributing to the trend toward increased market concentration and power for grocery retailers in many geographic markets. Retailer power is also argued to have been enhanced as a result of the introduction of scanner technology. This advancement yields information that enables retailers to assess faster and with greater precision the profitability of a particular product. Wielding this information, retailers are able to negotiate terms (including slotting fees) more forcefully for these products, as well as for related new products. Finally, the increasing number of new products introduced into the market is also cited as having contributed to more retailer market power. A greater number of products elevates the demand for shelf space held by retailers. Critics, having obtained enhanced market power as a result of these trends and advancements, contend that slotting fees simply are a mechanism for exercising this increased market power.

Channel relationships. The market power school also contends that the controversy between manufacturers and retailers over slotting fees has become a source of dysfunctional conflict in channel relationships. According to this view, tension and disagreement has reached such levels in some channels that it has damaged cooperation among members ostensibly positioned to complement one another in delivering consumer value (Dagnoli and Freeman 1988; Lucas 1996). Some commentators claim the dispute over slotting fees is the single greatest challenge to the future health of the grocery industry (Lucas 1996). Many contend

that the trade must join together to solve the controversy if the industry is to move forward and realize the benefits of innovative supply-chain management initiatives such as ECR (Kurt Salmon Associates Inc. 1993).

Dysfunctional conflict over slotting fees can disrupt critical tasks required for an efficient and competitive channel system. Tension may reduce the otherwise ongoing flow of information between channel members. Disagreement over the role of slotting fees can lead to unintended consequences. One illustration is the impact of slotting fees on the level of marketing support and promotional strategies by manufacturers. Unpersuaded by retailer explanations for slotting fees and believing they are merely employed to bolster retailer profits, many manufacturers are said to cover these fees through shifting marketing funds from other promotional areas, including consumer programs. According to critics, such practices and other outcomes of the controversy over slotting fees result in the inefficient allocation of marketing resources and less consumer information.

Discrimination. Still another market power argument is that slotting fees provide a basis for price/promotion discrimination among manufacturers, particularly favoring large firms over smaller ones (Aalberts and Judd 1991; Desiraju 1994; MacAvoy 1997; Sullivan 1997). Given the private and negotiated nature of slotting fees, retailers are said to be able to ask for and receive differential payments from different manufacturers. A particular contention is that some manufacturers can negotiate lower fees or avoid them altogether, leaving other firms to pay disproportionately. Larger manufacturers, given their market size and bargaining position, are argued to benefit from these practices by increasing their profits to the disadvantage of their smaller, less resourceful rivals. Although the laws for price discrimination are complex and open to interpretation (see Aalberts and Judd 1991), the Federal Trade Commission has indicated that the discriminatory application of slotting fees may be unlawful (Federal Trade Commission Guides 1990).

Competitive foreclosure. Slotting fees are also criticized as a competitive strategy used by more resourceful competitors to foreclose smaller rivals from the market through bidding up the price of shelf space (MacAvoy 1997). Given distribution dynamics, in many market channels, shelf space is considered an essential input or facility for producers and manufacturers. By bidding up the price of this input through slotting fee payments, more resourceful competitors can raise their rivals' costs with the aim of denying them access to such input or leaving them less able to compete. According to this argument, such efforts are employed to raise disproportionately the costs of new product introductions for smaller, less resourceful manufacturers—resulting in diminished profits and less innovation by these firms. Foreclosed firms are forced to seek alternative channels for their products or possibly even exit the industry. The end result, critics contend, is that consumers are deprived of worthwhile new products.

Facilitating practice for raising retail prices. A final objection to slotting fees is that their up-front payment and direct impact on retailer profits lessen aggressive retail com-

petition, leading to higher prices. As Shaffer (1991, p. 121) explains,

In providing a means for retailers to commit contractually to high prices, a manufacturer indirectly raises retailer profits by eliminating their incentive for aggressive downstream pricing. Although manufacturers would prefer lower retail prices and hence greater sales, the competition among themselves for the scarce shelf space provides the incentive for such contracts.

Slotting fee payments are argued to result indirectly in higher retail prices by providing up-front profits to retailers and in turn lowering retailers' incentive to compete vigorously on price. Manufacturers, though desirous of lower retail prices, pay slotting payments because of the intense competition for shelf space.

Method

To begin to understand which school of thought better describes slotting fees, a large-scale mail survey of managers in industries in which slotting fees are practiced was conducted. Given the early stage of theory development and the paucity of empirical evidence, the views of industry participants were deemed important for advancing knowledge and guiding further research. The objective was not to test formally the various "possibility theorems" underlying each school of thought but to determine the extent to which industry participants believe each theorem accurately reflects slotting fee practices.² Another objective was to investigate how the opinions of retail, wholesale, and manufacturer managers compared. Opinions about which there was considerable debate were thought to require more specific investigation than those effects about which there was consensus.

Preliminary Research

The survey design was influenced by a review of relevant trade press articles and ten preliminary in-depth interviews with executives from industries in which slotting fees are practiced (i.e., consumer packaged goods, pharmaceuticals, musical recordings, and books). These interviews yielded several insights:

- *Grocery industry sample.* Differences in the way slotting fees are used across industries indicated that comparisons across industries would be difficult and suggested a focus on one industry. The grocery industry, in which slotting fees are most common, was chosen.
- *Manufacturer, wholesaler, and retailer participants.* Observations and opinions about slotting fees varied depending on the channel level, suggesting that the views of managers representing differing channel positions should be obtained. For the grocery industry, three channel levels are relevant—manufacturers, wholesalers, and retailers.
- *Manager informants.* Although boundary-spanning personnel were responsible for negotiating and implementing slotting

fees, the budget impact and strategic nature of these fees meant that knowledge of their practice was necessary at both the operational and strategic levels of the firms. This suggested that the focus should be managers occupying positions at both levels. Within the grocery industry, retailer managers responsible for procurement and merchandising are the most involved, whereas for manufacturers, marketing and sales managers have the most experience. For wholesalers, which both pay and receive slotting fees, appropriate representatives include procurement and sales/marketing personnel.

- *Confidentiality and anonymity in data collection:* Slotting fees were an emotional and sensitive topic, which led many managers—particularly those in retailing—to be unwilling to speak "on the record." This suggested that special attention should be given to maintaining confidentiality and anonymity in data collection and analysis.

- *Sample design and measurement considerations:* Managers were very busy and were deluged with surveys, which suggested that particular attention should be paid to (1) respondent participation through sampling design and nonresponse bias testing and (2) respondent fatigue through instrument design, measures, and measure assessment.

Grocery Industry Survey

Using a short questionnaire (one folded-over legal-size sheet of paper with closed-ended questions) and a cover letter that stressed the involvement of our universities and the Marketing Science Institute, we conducted an industry-wide mail survey of managers representing manufacturer, retailer, and wholesaler grocery institutions.

Sample. Mailing lists purchased from *Supermarket News* (for grocery retailers and wholesalers) and Cahner's Direct Marketing (for manufacturers in the category of "marketing personnel in the prepared foods industry") provided the sample frame. A random sample drawn from each list resulted in an initial mailing of 2568 questionnaires—1210 to manufacturers, 1184 to retailers, and 174 to wholesalers.³ The cover letter and questionnaire were sent to all sample members in the fall of 1996. A week later, each recipient was sent a reminder postcard. Three weeks after the initial mailing, a follow-up letter and second questionnaire were sent to all sample members. To ensure anonymity and confidentiality, no tracking of respondents was attempted. Because of incorrect addresses or respondents unfamiliar with the topic, 110 mailings were returned not completed, which reduced the qualified sample to 2458. Overall, a total of 802 completed questionnaires were returned—including 285 from retailers, 379 from manufacturers, and 91 from wholesalers—for a 33% response rate. An additional 47 respondents classified their firms as being involved in activities at more than one channel level and were left out for separate study.⁴ Because wholesaler respondents indicated that their

²According to Fisher (1989), "possibility theorems," also called "exemplifying theory," involve postulates about what *can* happen relative to a particular phenomenon rather than postulates about what *will* happen. In this way, possibility theorems differ from more general theorems or generalizing theory.

³Our smaller sample for wholesalers follows the proportionately fewer wholesaler institutions found in the grocery industry compared with manufacturers and retailers.

⁴Because of the finding that observations and opinions of slotting fees varied depending on the channel level focused on and because our study objective was to investigate these differences, respondents who reported their firm was involved in multiple channel-level activities were excluded from the analysis.

channel level both paid and received slotting fees, the analysis focused on the responses of retailers and manufacturers.⁵

Key informants. The perceptions and opinions of grocery industry managers were sought. For retailers, buyers, merchandisers, and their managers best met the criteria of being knowledgeable about the phenomenon under study. For manufacturers, marketing, sales, and product management personnel were considered most knowledgeable. Table 4 provides a summary of respondent and firm characteristics.⁶ Respondent titles and average industry experience suggest that the sample includes knowledgeable informants. The respondents also represented firms of various sizes and geographic markets.

Tests of nonresponse bias. Early and late respondents were compared for industry experience, business (i.e., retailer versus manufacturer), firm size, and geographic markets

served (i.e., global, national, regional, or local). Early respondents were slightly less experienced (i.e., an average of 20 years versus 23 years, $p < .01$) but were similar on other measures. Telephone interviews were also conducted with 154 randomly selected sample members, both retailers (80) and manufacturers (74). Of those contacted, 52 (34%) confirmed their completion and return of the questionnaire—a response rate similar to the mail survey. Those who had not received or not returned the questionnaire were asked three questions, and their responses were compared with the completed questionnaires. Although nonrespondents had somewhat less industry experience than respondents (16.5 versus 21.3 years, $p < .01$), no significant differences were found for questions about firm size and the growth of the use of slotting fees. Finally, the answers to two additional questions asked of all telephone contacts (regardless of questionnaire receipt/disposition) were compared across the self-reported responders and nonresponders. No significant differences were found for questions about the contacts' knowledge of slotting fees or their views on the importance of the fees. In summary, except that respondents may be slightly more experienced than nonrespondents, little evidence of potential nonresponse bias was observed.

Measures and measurement assessment. Concern for respondent participation and fatigue limited the questionnaire length and constrained the number of measurement items that could be included. Multiple-item scales were not feasible. The employed items are shown in Table 5. The rationale for the content of most items should be reasonably clear from the previous discussion. Measures were designed to learn respondents' perspectives on the research questions outlined in Tables 2 and 3. The basis for the content of other items is elaborated on in the next section.

TABLE 4
Characteristics of the Respondents and Their Firms

	Manufacturers	Retailers
Respondents	379	285
Job Titles		
President, owner, chief executive officer	6%	9%
Vice president	26%	18%
Sales management ^a	40%	
Category manager		18%
Marketing/product management ^a	16%	
Buyer/merchandise		18%
Directors/managers (usually of procurement)		36%
Industry Experience	18.1 years	24.9 years
Size of Firm		
One of the biggest in the industry	23%	19%
Mid-size firm	36%	27%
Smaller firm	40%	52%
Geographic Market Served		
Worldwide	23%	2%
National	41%	6%
Regional	32%	37%
Local	4%	53%

^aEleven respondents listed themselves as directors of sales and marketing and are included in both of these categories.
Notes: Totals may not equal 100% because of rounding or "other" responses.

TABLE 5
Measures and Results

Measure	Response Cues	Manufacturers	Retailers	Difference ^a
Efficiency School				
Signaling and screening				
Slotting fee size is a good indicator of the likely success of a new product.	s.d.—s.a. ^b	1.49*	2.02*	m*
If a manufacturer is unable or unwilling to pay a slotting fee for a product, then a retailer is justified in viewing that product as too risky to carry.	s.d.—s.a.	1.75*	2.49*	m*
What effect have slotting fees had on the percentage of successful new product introductions?	l.d.—l.i. ^c	-.18* ^e	+.10	m*
Cost sharing				
Slotting fees have come about as a result of increasing costs of handling products.	n.f.—m.f. ^d	2.76*	3.85*	m*
The amount charged for slotting fees does not cover the costs a retailer incurs in adding a new product.	s.d.—s.a.	1.73*	3.43*	d*
Risk shifting				
Slotting fees simply shift the risk of product introductions away from retailers and back to manufacturers.	s.d.—s.a.	3.56*	3.17	m*
What effect have slotting fees had on the risk in new product introductions for manufacturers?	l.d.—l.i.	+.82*	+.49*	m*
What effect have slotting fees had on the risk in new product introductions for retailers?	l.d.—l.i.	-.57*	-.09	m*
Shelf space allocation				
Slotting fees are simply rent for shelf space.	s.d.—s.a.	3.72*	2.54*	d*
Retailer product assortments are often based on slotting fees.	s.d.—s.a.	3.78*	2.50*	d*
Demand/supply apportionment				
Slotting fees have come about as a result of growth in the number of new products introduced.	n.f.—m.f.	3.80*	4.17*	m*
Slotting fees have come about as a result of fewer truly new products.	n.f.—m.f.	2.75*	3.23*	m*
Facilitating practice for lowering retail prices				
What effect have slotting fees had on the prices charged by retailers?	l.d.—l.i.	+.58*	+.25*	m*
Market Power School				
Exercise of market power by retailers				
Slotting fees have come about as a result of greater retailer influence.	n.f.—m.f.	4.11*	3.37*	m*
Compared to five years ago, retailers are much more likely to require slotting fees.	s.d.—s.a.	4.35*	3.81*	m*
What effect have slotting fees had on the retailer's influence over product merchandising decisions?	l.d.—l.i.	+.94*	+.59*	m*
What effect have slotting fees had on the manufacturer's influence over product merchandising decisions?	l.d.—l.i.	+.02	+.43*	m*
Large retailers are more likely to require slotting fees than small retailers.	s.d.—s.a.	4.08*	4.19*	
What effect have slotting fees had on profit levels of smaller retailers?	l.d.—l.i.	+.32*	+.18* ^e	
What effect have slotting fees had on profit levels of larger retailers?	l.d.—l.i.	+1.12*	+.69*	m*

TABLE 5
Continued

Measure	Response Cues	Manufacturers	Retailers	Difference ^a
Channel relationships				
Slotting fees have damaged manufacturer–retailer cooperation.	s.d.–s.a.	3.89*	2.42*	d*
Slotting fees have decreased the flow of information between manufacturers and retailers.	s.d.–s.a.	3.03	2.08*	d*
What effect have slotting fees had on the amount of marketing support provided by manufacturers?	l.d.–l.i.	–.26*	+.21* ^e	d*
Slotting fees have resulted in less consumer-directed marketing.	s.d.–s.a.	3.87*	2.50*	d*
Discrimination				
All manufacturers pay the same amount of slotting fees per SKU per store.	s.d.–s.a.	1.47*	1.69*	m*
Manufacturers are often able to negotiate lower slotting fees.	s.d.–s.a.	3.22	3.25*	
Compared to five years ago, slotting fees are more likely to be negotiated.	s.d.–s.a.	3.22* ^e	3.40*	
What effect have slotting fees had on the profit levels of smaller manufacturers?	l.d.–l.i.	–1.12*	–.54*	m*
What effect have slotting fees had on the profit levels of larger manufacturers?	l.d.–l.i.	–.23*	.15* ^e	d*
Competitive foreclosure				
Manufacturers have sought alternative distribution channels for their products as a result of slotting fees.	s.d.–s.a.	3.85*	2.80* ^e	d*
Slotting fees have caused manufacturers to exit our industry.	s.d.–s.a.	3.34*	2.19*	d*
Slotting fees prevent good products from getting to market.	s.d.–s.a.	4.09*	2.28*	d*
What effect have slotting fees had on the number of new product introductions by smaller manufacturers?	l.d.–l.i.	–1.19*	–.57*	m*
What effect have slotting fees had on the innovativeness of new product introductions by smaller manufacturers?	l.d.–l.i.	–.45*	–.10	m*
What effect have slotting fees had on the number of new product introductions by larger manufacturers?	l.d.–l.i.	+.25*	+.39*	
What effect have slotting fees had on the innovativeness of new product introductions by larger manufacturers?	l.d.–l.i.	+.32*	+.41*	
Facilitating practice for raising retail prices				
What effect have slotting fees had on the prices charged by retailers? ^f	l.d.–l.i.	+.58*	+.25*	m*

^aResults of tests of differences between responses of retailers and manufacturers, m = magnitude difference, d = direction difference. A direction difference indicates that the results differ between manufacturers and retailers. A magnitude difference indicates that the reported results from manufacturers and retailers are statistically different at $p < .01$.

^bResponse cues: 1 = strongly disagree (s.d.), 5 = strongly agree (s.a.); test value for significance tests = 3 (neither agree nor disagree).

^cResponse cues: –2 = large decrease (l.d.), 0 = no effect, +2 = large increase (l.i.); test value for significance test = 0 (no effect).

^dResponse cues: 1 = not a factor (n.f.), 5 = major factor (m.f.); test value for significance test = 1 (not a factor).

^eThis item loses statistical significance when a more conservative Bonferroni-corrected p -value is applied. All Bonferroni-corrected values were calculated on the basis of the number of tests within a particular theory. Thus, for example, for the six tests (3 items $\times$ 2 groups) of signaling/screening, the p -value was adjusted from $p < .01$ to $p < .00167$ ($= .01/6$).

^fThis question also appears under Efficiency School.

* $p < .01$.

Standard measurement analysis was not feasible; however, a check for response reliability across items was included. Each questionnaire contained one duplicate item

spaced reasonably apart. Responses for these duplicate items were compared, and no significant mean differences were found. The items were reasonably correlated ($r = .65$;

$p < .001$), which suggests that respondents were attentive and involved in their questionnaire completion. Further evidence of high involvement is indicated by 42% responding to an open-ended concluding question that allowed respondents to offer comments on the practice of slotting fees or the questionnaire.

Results and Discussion

The results from the survey are presented in Table 5. The mean of each item for the manufacturer and retailer respondents is shown. Unless otherwise indicated, reported values differ from the test value at a level of .01 or less.⁷ Significance tests are compared with each relevant scale point (see footnotes b, c, and d at the bottom of Table 5); for example, on Likert scales, with endpoints labeled strongly agree/strongly disagree, tests compared the responses with the midpoint. The fifth column in Table 5 indicates whether statistically significant differences in the magnitude and/or direction of the responses exist between the manufacturer and retailer samples.

Findings on the Efficiency School

Signaling and screening. The results suggest that manufacturers and retailers do not believe that slotting fees serve as a signal or screen for new products. Both manufacturers (1.49) and retailers (2.02) disagree (five-point scale, "strongly disagree" to "strongly agree") that "slotting fee size is a good indicator of the likely success of a new product." Agreement would suggest that slotting fees provide some form of information signal. Manufacturers (1.75) and retailers (2.49) also disagree that "if a manufacturer is unable or unwilling to pay a slotting fee for a product, then a retailer is justified in viewing that product as too risky to carry." This suggests that they do not view slotting fees as a screening mechanism for new products.

The results also do not indicate that slotting fees are used unconsciously as a signal or screen. Reports of increases in successful new product introductions would suggest that signaling and screening is occurring whether or not it is recognized. Responses to the question, "What effect have slotting fees had on the percentage of successful new product introductions?" average to very near "no effect" (the center point) for retailers (+.10, $p = \text{n.s.}$; five-point scale, "large decrease" to "large increase") and to a slight decrease for manufacturers (-.18).

Viewed together, these findings appear to counter claims of efficiency that arise from the use of slotting fees as a signal or screen for new products. The findings differ from the ideas advanced in the extant literature by several scholars applying theoretical models to the study of slotting fees but are consistent with the findings of others. Work by Chu (1992; Messinger and Chu 1995) and Lariviere and Padmanabhan (1997) analytically models the role of slotting fees as a mechanism for conveying new product information under various circumstances. Sullivan (1997), employing

secondary data, provides some empirical support for the signaling view. In contrast, our findings are consistent with an empirical study of actual new product adoption decisions conducted by Rao and McLaughlin (1989), who did not find slotting fees to significantly influence the decision to accept or reject a new product.

Cost sharing. The results also suggest that though manufacturers and retailers view the increasing costs of new products as a factor in the development of slotting fees, they do not believe that equitable cost sharing occurs as a consequence of these fees. On a scale of one ("not a factor") to five ("major factor"), retailers average 3.85 and manufacturers 2.76 in response to the statement, "Slotting fees have come about as a result of increasing costs of handling products." Our assumption was that respondents first needed to consider increasing costs a causal factor driving slotting fees if they were to observe an opportunity for cost sharing.

The relation of new product costs to the amount charged for slotting fees was also explored as a basis for understanding the extent of cost sharing that might be taking place. Retailers (3.43) agree that "the amount charged for slotting fees does not cover the costs a retailer incurs in adding a new product," whereas manufacturers (1.73) disagree. Thus, whereas retailers believe that the fees do not completely compensate them for the costs of adding a new product, manufacturers believe they do—and possibly exceed such costs.

In general, the manufacturer findings are consistent with Deloitte & Touche's (1990) study, suggesting that slotting fee amounts exceed the costs to add a new product and delete an old one. However, Deloitte & Touche's study does not consider opportunity costs, which may be factored in by the retailer respondents in our study. This may partially explain the difference in opinion between the retailer and manufacturer respondents.

Risk shifting. The results suggest that respondents believe that slotting fees have resulted in some risk shifting from retailers to manufacturers. Manufacturers (3.56) agree that "slotting fees simply shift the risk of product introductions away from retailers and back to manufacturers," whereas retailers neither agreed nor disagreed (3.17, $p = \text{n.s.}$). As to the amount of risk, both manufacturers (+.82) and retailers (+.49) report that slotting fees increase the "risk in new product introductions for manufacturers." Alternatively, manufacturers (-.57) view a decrease in the "risk in new product introductions for retailers," which was not reported by retailers (-.09, $p = \text{n.s.}$). In summary, although both parties see changes in the risk of new product introductions, manufacturers report that this risk is shifting from retailers to manufacturers, whereas retailers report that it is increasing for manufacturers without a corresponding decrease in their own risk.

The assumption of some scholars (see Kelly 1991; Sullivan 1997; Toto 1990) is that this shift moves the risk of new product failure to the more informed channel member—the manufacturer as the source of innovation. Although the findings support the idea that slotting fees shift such risk to manufacturers, this study did not investigate the assumption that manufacturers are more informed than retailers about a new product's potential success or failure.

⁷Given the large number of tests, a relatively conservative p -value was chosen. In addition, footnote "c" in Table 5 indicates those comparisons that were not statistically significant with a more conservative Bonferroni correction adjusted p -value.

Shelf space allocation. Respondents differ in how they view slotting fees affecting the allocation of shelf space and the fees' relation to product assortment decisions. Addressing the logic that shelf space is a commodity and slotting fees act as bids for shelf space rental, manufacturers (3.72) agree that "slotting fees are simply rent for shelf space," but retailers (2.54) disagree. Focusing on retailer product assortment decisions and their connection to slotting fees, manufacturers (3.78) again agree that "retailer product assortments are often based on slotting fees," but retailers (2.50) disagree.

The mixed results do not directly assess Toto's (1990) assertion that the fees help retailers assign scarce retail shelf space to its best possible use. The results, however, do suggest that manufacturers agree with the underlying assumptions but that retailers tend to disagree.

Demand/supply apportionment. Two questions in our survey are consistent with the view that slotting fees help apportion an oversupply of new products if a less-than-commensurate demand for these products exists. In relation to the logic that an oversupply of new products has led to slotting fees, "growth in the number of new products introduced" was ranked (five-point, "not a factor" to "major factor") first among nine factors by retailers (4.17) and second by manufacturers (3.80). Among the same nine factors, manufacturers (2.75) and retailers (3.23) identify "fewer truly new products" as a moderate influence on the use of slotting fees (e.g., ranked eighth by manufacturers and sixth by retailers).

Thus, the results provide some support for the logic of apportionment advanced by Sullivan (1997). The results indicate that slotting fees may help apportion an oversupply of products that lack truly innovative features. One possible explanation for the differential weighting of the supply and demand influences by each group may be the particular perspective that informs each. Given their respective roles, retail managers may be more sensitive to supply (versus demand) influences on the use of slotting fees.

Facilitating practice for lowering retail price. Finally, contrary to the view that contends that slotting fees enable retailers to compete more aggressively by unbundling the price of shelf space from the product, the results suggest that slotting fees contribute to higher retailer prices. According to both manufacturers (+.58) and retailers (+.25), slotting fees have had the effect of increasing "prices charged by retailers."

These findings are in contrast to the findings of Sullivan (1997), whose analysis of secondary data shows that retail prices had not increased relative to other prices during the period in which slotting fees were first introduced and became prevalent. Sullivan postulates that by paying slotting fees up front, manufacturers unbundle the price paid for space from the new product transaction, which results in more aggressive price competition. Although our study does not directly test Sullivan's (1997) logic, the obtained results do not support her conclusion. One view is that even though manufacturers pay slotting fees up front, they consider the costs of these fees in calculating their price to consumers (e.g., they do not unbundle the price paid for space from the new product transaction).

Findings on the Market Power School

Exercise of market power by retailers. Although the nature of power and influence held by retailers continues to be under debate (see Farris and Ailawadi 1992; Kim and Staelin 1996; Messinger and Narasimhan 1995), the study results tend to support the contention that (1) greater retail influence is associated with slotting fees, (2) these fees are related to changes in the relative influence of manufacturers and retailers, and (3) larger and arguably more powerful retailers are more likely to require and benefit from slotting fees.

Regarding the association of slotting fees with retail influence, of nine factors suggested to have contributed to slotting fees, manufacturers (4.11) identify "greater retail influence" first. Retailers (3.37) agree that this factor is important but rank it lower (fifth). Manufacturers (4.35) and retailers (3.81) agree, however, that "compared with five years ago ... retailers are much more likely to require slotting fees." Thus, although manufacturers and retailers differ as to the relative contribution of greater retail influence, they both agree that this influence is a factor and that retailers are more likely to require these slotting fees than they were five years ago.

In an attempt to understand the nature of influence thought to extend from slotting fees, opinions were sought as to the effect of slotting fees on channel merchandising decisions. The results suggest that manufacturers (+.94) and retailers (+.59) agree that "retailers' influence over product merchandising decisions" has increased as a result of slotting fees. For slotting fees' effect on "manufacturers' influence over product merchandising decisions" due to some type of quid pro quo arrangement, retailers (+.43) report a small increase, an opinion not shared by manufacturers (+.02; $p = n.s.$).

If power is important in the application of slotting fees, one view is that larger retailers are more likely to require them and receive greater benefits through their use. Manufacturers (4.08) and retailers (4.19) agree that "large retailers are more likely to require slotting fees than small retailers," and smaller retailers agree even more strongly than their larger counterparts (4.56 versus 3.44). Asked the extent to which these fees contribute to the "profit levels of larger retailers" and the "profit levels of smaller retailers," manufacturers (+1.12 and +.32) and retailers (+.69 and +.18) observe some increase in the profits of both but a greater increase for larger retailers. Because large and small retailers may have a better understanding of their own circumstances, it is notable that larger retailers, though agreeing that larger firm profits are larger, do not agree as strongly as did the full retailer sample (+.42 versus the total sample mean of +.69). The smaller retailers' assessment of smaller retailer profits does not differ from the total retailer sample mean.

Together, these results suggest that manufacturers and retailers generally agree that the exercise of market power represents an important explanation for slotting fees. Various authors have advanced the idea that slotting fees result from increased retailer market power, though secondary-data results by Sullivan (1997) and anecdotal findings by Toto (1990) have not supported this view. Additional re-

search and analysis may be necessary to reconcile these contradictory findings.

Channel relationships. Manufacturers and retailers differ in their views of how slotting fees affect cooperation, information exchange, support, and decision making in their channel relationships. Manufacturers (3.89) agree that "slotting fees have damaged manufacturer-retailer cooperation," whereas retailers (2.42) disagree. Regarding information exchange, manufacturers (3.03; $p = n.s.$) are neutral, whereas retailers (2.08) disagree with the view that "slotting fees have decreased the flow of information between manufacturers and retailers." For the contention that slotting fees have led to reductions in marketing support and consumer marketing activities by manufacturers because resources are shifted to pay these fees, manufacturers report a slight decrease (-.26) and retailers a slight increase (+.21) in "the amount of marketing support provided by manufacturers." Finally, manufacturers (3.87) agree that "slotting fees have resulted in less consumer-directed marketing," but retailers (2.50) disagree. Together, the results yield contradictory conclusions but suggest that manufacturers' views are consistent with those of some industry observers (see Dagnoli and Freeman 1988; Lucas 1996), whereas retailers' views are not.

Discrimination. The results provide some support for the propositions that (1) not all manufacturers pay the same amount for their slotting fees, (2) some are able to negotiate lower fees, and (3) slotting fees have led to profit differences among large and small manufacturers, which possibly reflects discrimination. With respect to differential slotting fee payments, manufacturers (1.47) and retailers (1.69) strongly disagree that "all manufacturers pay the same amount of slotting fees per SKU per store." As to the negotiated nature of these fees, retailers (3.25) agree, but not strongly, that "manufacturers are often able to negotiate lower slotting fees," whereas manufacturers are neutral on this item (3.22; $p = n.s.$). Manufacturers (3.22) and retailers (3.40) also agree that compared with five years ago, "slotting fees are more likely to be negotiated" now. Finally, in terms of the differential profit impact of varying payments across manufacturers, both manufacturers (-1.12) and retailers (-.54) believe slotting fees result in a decrease in "the profit levels of smaller manufacturers." Manufacturers (-.23) and retailers (+.15) differ, though, in how "the profit levels of larger manufacturers" have been affected by these fees; manufacturers report a slight decrease, and retailers a slight increase. The larger manufacturers in this sample believe even more strongly than smaller manufacturers (-.40 versus -.02) that the profit levels of larger firms have declined because of slotting fees—the results reported by larger and smaller manufacturers are not statistically different in their assessment of smaller firms' profits.

Together, these findings are in contrast to inferences reported by Sullivan (1997) and Toto (1990). The results suggest that managers generally believe that payment and receipt of slotting fees differ by the size of the parties. On the basis of differential payments, managers believe that the profits of smaller manufacturers have been affected more adversely than those of their larger counterparts. One conclusion is that manufacturers pay different amounts for their

slotting fees and that differential profit impacts across larger and smaller manufacturers occur. Although such results could be expected if smaller manufacturers are forced to pay proportionately more in slotting fees than are their larger rivals, extending this logic to suggest that illegal discrimination is occurring is difficult given the complicated laws that apply to price discrimination. Further research focusing on the circumstances under which these conditions occur and on whether illegal price discrimination is taking place is required.

Competitive foreclosure. Retailers and manufacturers differ in their views of whether slotting fees are used as a competitive strategy by more resourceful competitors to deny rivals access to shelf space. Regarding the impact of slotting fees as a mechanism of foreclosure, manufacturers (3.85) agree whereas retailers disagree (2.80) that "manufacturers have sought alternative channels for their products as a result of slotting fees." Manufacturers (3.34) also agree and retailers (2.19) disagree that "slotting fees have caused manufacturers to exit our industry." Finally, manufacturers agree (4.09) and retailers disagree (2.28) that "slotting fees prevent good products from getting to market." Apparently, manufacturers and retailers view the use of slotting fees as a competitive strategy very differently.

With regard to the more intermediate implications of a foreclosure strategy, manufacturers and retailers tend to hold more consistent views. Manufacturers (-1.19 and -.45) report decreases in the "number" and "innovativeness" of new product introductions by smaller manufacturers" as a result of slotting fees, whereas retailers reported a decline in the number (-.57) but not the innovativeness (-.10; $p = n.s.$). However, both manufacturers (.25 and .32) and retailers (.39 and .41) report increases in the "number" and "innovativeness of new product introductions by larger manufacturers" due to slotting fees.⁸

Overall, the results provide mixed support for the outcomes suggested by the strategy of competitive foreclosure (MacAvoy 1997). Consistent with the predictions of this theory, manufacturers and retailers report a diminished number and innovativeness of product introductions and lower profits by smaller manufacturers as a result of slotting fees. In contrast, whereas manufacturers suggest that seeking alternative distribution channels has also been a result of slotting fees, retailers do not share this view. Because other factors may also contribute to these outcomes, further research is necessary for a better understanding of the role of slotting fees as a strategy of competitive foreclosure.

Facilitating practice for increasing retail prices. Finally, consistent with the view that slotting fees lessen aggressive retail competition and lead to higher prices (Shaffer 1991), both manufacturers (+.58) and retailers (+.25) report that these fees contribute to an increase in "the prices charged by retailers" (as reported previously). The results tend to support the assertions of the market power school—that slotting

⁸The differences reported here were consistent across retailers and manufacturers of different sizes. The results found no statistically significant ($p < .01$) differences across respondents who reported being employed by manufacturers (or retailers) classified as "one of the biggest in the industry," "a mid-size firm," and "a smaller firm."

fees result in higher retail prices—as opposed to those of the efficiency school, which proposes that the fees lower prices.

Summary Overview and Discussion of Findings for Both Schools of Thought

Figure 1 provides a summary overview of the empirical findings for both schools of thought, explicitly considering with which possibility theorems manufacturers and retailers tend to agree or disagree. The four-cell matrix provides a broadened perspective on the research and its findings for slotting fees. Using Figure 1 as an organizing framework, we review the content of the cells and suggest reasons for the observed agreement and disagreement across manufacturer and retailer respondents. Both substantive and methodological explanations are explored.

The lower right-hand cell in Figure 1 indicates that both manufacturer and retailer respondents, for the most part, do not agree with the theorems that suggest that slotting fees provide a signaling and screening mechanism for new products or that their practice facilitates the lowering of retail prices. Close inspection of the assumptions and logic underlying these theorems suggests several possible explanations. The signaling/screening theorem assumes that manufacturers have more knowledge about the likely success or failure of a new product. Several factors, however, suggest that this may not always be the case. From a theoretical perspective, modern channel thought envisions manufacturers and retailers sharing in the effort and success of a new product. Such a perspective is currently receiving increased emphasis through relationship marketing efforts and other channel partnering initiatives (e.g., ECR). These and other efforts suggest a movement toward information symmetry in these

channels. More practically, recent advancements in scanner data have provided retailers greater insight into consumer behavior previously unavailable. Retailers now often argue for more trade support from manufacturers on the basis of the claim that retailers have a better understanding of their customers because of this insight and can therefore market products better than the manufacturer can. One observation is that slotting fees have emerged during a period in which the distribution of knowledge regarding the likely success of new products is shifting and becoming more symmetric in the market channel.

The other unsupported theorem argues that slotting fees lower retail prices by unbundling the product transaction from the price paid for the shelf space. This view may also be based on questionable assumptions. This theorem assumes that the fee paid to a retailer will be applied toward the price of the product for which it is paid. Comments on our questionnaires indicate that this is a primary source of frustration for manufacturers—that retailers do not use the fees in support of the product for which it is paid. Because retailer profits have not increased since slotting fees emerged (Farris and Ailawadi 1992), it may be that retailers are passing these new revenues on to consumers by pricing other products more aggressively. Thus, the two theorems that were not supported by retailer or manufacturer managers may assume conditions that do not currently reflect practices in this channel.

The lower left-hand and upper right-hand cells in Figure 1 contain theorems that are generally agreed with by one of the two respondent groups but are not supported by the other. The differences in opinion represented in

FIGURE 1
Overview of Findings

		Manufacturers tend to ...	
		Agree	Disagree
Retailers tend to ...	Agree	Efficiency •Risk shifting •Demand/supply apportionment Market Power •Exercise of retail market power •Discrimination •Facilitating practice for raising retail prices	Efficiency •Cost sharing Market Power
	Disagree	Efficiency •Shelf space allocation Market Power •Channel relationships •Competitive foreclosure	Efficiency •Signaling/screening •Facilitating practice for lowering retail prices Market Power

these cells may reflect the underlying tension between manufacturers as payers and retailers as recipients of slotting fees. Respondents' written comments suggest that the subject remains highly emotional and the "fairness" of the practice depends on whether a respondent was a manufacturer paying the fees or a retailer collecting them.

Another potential explanation for these findings is the different channel positions represented by the two types of respondents. For example, retailers (as opposed to manufacturers) could be expected to have a better perspective on whether the amounts paid for slotting fees accurately reflect the costs of adding new products to their shelves (i.e., cost sharing). Retailers probably possess greater knowledge of the effects of slotting fees on their decisions to allocate shelf space to particular new products. Alternatively, manufacturers appear to have greater knowledge about whether they actually considered and sought alternative distribution channels for their new products because of slotting fees (i.e., competitive foreclosure). Each would appear to be uniquely positioned to assess the impact of slotting fees on its channel relationships and to be influenced in its assessment depending on whether it was a payor or payee of slotting fees.

Still another related explanation for the lack of agreement shown in these cells of Figure 1 could be self-interest on the part of the respondents. The managers may have thought that they could influence others to support their particular interests by giving answers that helped create survey results that supported a certain viewpoint. Retailers, for example, might have wanted the results to show that slotting fees fail to cover new product introduction costs in the hope of enabling themselves to raise those fees.

The upper left-hand cell in Figure 1 indicates that manufacturers and retailers are in agreement with respect to the logic of two of the efficiency school theorems (i.e., risk shifting and demand/supply apportionment) and three of those advanced by the market power school (i.e., exercise of retailer market power, discrimination, and facilitating practice for raising retail prices). Given this agreement, these five theorems appear to be most tenable to managers. Unlike those theorems with which both groups disagree, these five may accurately reflect managers' views of their world. Moreover, each of the theorems may reflect outcomes readily observable to both parties. For example, the ability to observe a shift in risk, apportionment of shelf space, the exercise of retailer power, discrimination, and the existence of higher retail prices may rely less on the relative channel position of a manufacturer or retailer and be easily observable to both.

Implications and Conclusions

Overall, the findings of the research indicate that manufacturer and retailer grocery managers agree with several possibility theorems underlying both the efficiency and market power schools (see Figure 1). Managers jointly disagree with or hold views contrary to the other theorems. Although the literature and debate about slotting fees has tended to assume that retailers would support the efficiency-based theorems and manufacturers the market power-based theo-

rems, both responding groups were found to agree with theorems from each school. These findings, however, should not be interpreted to confirm or reject any one of the theorems. Rather, the exploratory nature of the research requires that they be viewed as yielding provocative insights and meaningful directions for further inquiry. Although a benefit of exploratory research is its ability to help prioritize future studies, in-depth research is required before definitive conclusions regarding slotting fees may be drawn.

The shared agreement of managers with theorems underlying both the efficiency and market power schools suggests that slotting fees may best be understood through a combination of theorems from each school. Indeed, a full explanation of slotting fees may require integrating the two schools of thought. Reconciling the distinct perspectives of the efficiency and market power schools, however, may require more than the simple integration of their theorems. One possibility is a contingency approach. For example, there may be characteristics of certain product-markets that make one school and its theorems more valid. In highly competitive product-markets, theorems that underlie the efficiency school may be more valid. Alternatively, in less competitive product-markets, the market power school and its theorems may have more validity. The current study does not specifically investigate this possibility.

Although managers tend to share agreement with several of the theorems, various issues remain. For example, although the findings suggest the association of retailer market power and slotting fees, debate continues to surround the issue of increasing retailer market power, the nature of this power, and its exercise through slotting fees. Each of these areas requires further inquiry. The study also suggests that the practice of slotting fees can result in discriminatory outcomes. Whether such outcomes violate the laws against price discrimination, however, remains an open question. The consensus results in the study regarding the direct impact of slotting fees on retail prices is of particular interest because of its potential implications. A fuller understanding of this linkage should be sought. Last, although the findings suggest that some risk of new products has shifted from retailers to manufacturers, the actual implication of this risk for efficiency is not addressed and is an issue for future study.

In the current study, we organized the various possibility theorems advanced in the literature to explain slotting fees and then gathered the views and opinions of practicing managers to understand these explanations better. In marketing, as in other disciplines (e.g., economics, law), competing possibility theorems commonly exist to explain phenomena of interest. These theorems are typically investigated individually through analytic or empirical methodologies to add to researchers' understanding. Prior research on slotting fees has, for the most part, proceeded along these lines. A particular contribution of the current research is its organization and empirical examination of the variety of possibility theorems proposed to explain slotting fees. Considerable debate centers on the merits of the two different schools of thought for these fees. The approach taken adds to the understanding of these schools and yields

the basis for appraising their relative merits through further research. The same approach might be usefully applied in other contexts in which competing perspectives and theories exist.

Although the findings and research approach for the study add to the knowledge about slotting fees and help clarify the debate over them, we acknowledge some limitations. In particular, the use of multiple single-item measures for examining each theorem, though carefully developed and necessary given the study objectives, restricts the ability to test for all forms of validity and reliability. Further research adopting the objective of examining each theorem in depth should develop more rigorous measures for the constructs examined. In addition, although an anonymous survey targeted toward informed industry participants with little non-response bias was used, manager perceptions, for a variety of reasons, may not accurately reflect reality and their opinions about slotting fees. Respondents may have had limited information and knowledge, or their perceptions may have been distorted by self-interest. Indeed, it is possible that some actions and motives related to slotting fees are unconscious and cannot be revealed through the type of study we conducted. Taking into consideration these potential limitations and others, we advocate additional studies of slotting fees that will elucidate their nature and implications for the marketplace.

Marketing Channel Management

Slotting fees have quickly grown to be an important aspect of the relationship between many grocery manufacturers and retailers. Although the findings of the current research suggest that slotting fees are a source of conflict in these relationships, they also suggest potential avenues for conflict resolution. The prestudy interviews and the written comments of respondents support observations in the literature and trade press that the practice of slotting fees is controversial. Conflict over slotting fees jeopardizes the ability of manufacturers and retailers to realize the benefits of increased channel coordination that cooperative efforts such as the recent ECR initiative are intended to achieve. The goal of ECR is to enhance the efficiency of store assortment, replenishment, promotion, and introduction decisions through enhanced cooperation in the channel (Kurt Salmon Associates 1993). It has been estimated that full-scale implementation of ECR in the grocery industry could result in savings of more than \$40 billion. Other

industries have found that implementation of similar initiatives requires a high level of cooperation across the supply chain.

Although cooperation may be difficult to achieve in the face of conflict over slotting fees, there may be opportunity for détente. The relatively high degree of consensus among manufacturers and retailers toward various theorems underlying each school raises the possibility that shared sentiments could provide the basis for working together. Although some issues highlight the disagreement between manufacturers and retailers, such disagreement could be addressed through joint sponsorship of research and/or participation in conflict resolution. For example, joint sponsorship of research incorporating advancements in cost accounting (e.g., activity-based costing) could help detail the true costs of introducing new products (see Deloitte & Touche 1990), which would help manufacturers and retailers develop a common perspective on these costs. A more shared perspective on underlying costs may help the parties jointly develop initiatives for better managing such costs. Conflict could also be addressed through joint sponsorship of research on the effects of slotting fees on (1) manufacturer–retailer relations, (2) retailer assortments, (3) allocation of manufacturers' marketing budgets, (4) manufacturers' distribution decisions, and (5) the ability of goods to get to market—areas in which, according to our research, some disagreement exists. Interactions on these topics could provide each side an opportunity to understand the other's perspective better.

Public Policy Development

Slotting fees have also become an important issue for policymakers, who have attempted to reconcile the fees' effects on competition. The support found for each school of thought suggests that slotting fees may both stimulate competition by improving distribution efficiency and damage competition by enhancing market power. Federal and state agencies and the courts face a considerable challenge in understanding and balancing these competing implications. Although some results in the current study could be interpreted to provide support for public policy restrictions on slotting fees, these results should not be treated as evidence of market failures or legal wrongdoing. Rather, the research should be viewed as a useful foundation for informing future public policy development.

APPENDIX

Academic Contributions on Slotting Fees

Legal Analysis

MacAvoy (1997)	Several antitrust causes of actions potentially apply to slotting allowances: conspiracy theories, monopolization and exclusionary conduct, discriminatory price and promotional concessions, and state law claims.
Aalberts and Judd (1991)	Various provisions (2d and 2f) of the Robinson–Patman Act against unlawful promotion and pricing discrimination may apply to slotting fees.
Cannon and Bloom (1991)	Slotting allowances may violate the Robinson–Patman Act, Section 2(d).

APPENDIX Continued

Public Policy Analysis

- Gundlach and Bloom (1998) A variety of differences in the regulatory environment, industry structure, marketing practices, and consumer consumption behavior within the alcohol beverage industry compared with the broader grocery sector distinguish and rationalize disparate public policy treatment of slotting allowances by the Bureau of Alcohol, Tobacco and Firearms versus other public agencies.
- Kelly (1991) The emergence of slotting fees could be a natural marketplace reaction to increased product innovation rather than the result of increased market power at either the retail or manufacturing level. Evidence indicates that at least some of the increase in slotting fees is the result of increased innovation rather than output restrictions.
- Toto (1990) Slotting fees improve the informational content of the market by placing appropriate incentives before the bilateral participants.
- The buyer power hypothesis expects that shelf space fees will be levied on all types of products, but trade publications fail to provide a sufficient amount of support for this theory.
- That slotting allowances are paid by large and small as well as new and old firms makes the entry deterrence argument less believable.
- The plethora of new product launches in the increasingly oligopolistic food processing industry has raised the demand for shelf space to a level at which slotting allowances can be charged to alleviate the shortage created.

Analytic Modeling

- Lariviere and Padmanabhan (1997) A slotting allowance serves two purposes in launching a product: passing information down to the retailer and shifting costs up to the manufacturer.
- Sullivan (1997) Slotting allowances may serve as a risk-sharing mechanism and may provide a signal of new product demand.
- The appearance of slotting fees has been accompanied by an increase in (1) the supply of new products, (2) the number of new products demanded by retailers, and (3) the total number of products stocked per retailer.
- The appearance of slotting fees has not been accompanied by an increase in (1) the quantity sold by retailers, (2) manufacturer prices, or (3) retail prices and profits.
- Messinger and Chu (1995) Manufacturers signal the potential profitability of their new products by paying slotting allowances.
- Product proliferation leads to an increase in slotting allowances.
- Desiraju (1994) For setting slotting allowances, the brand-by-brand method enables the retailer to obtain higher allowances, whereas the uniform method enables retailers to enjoy the success of any reasonable new introduction.
- Chu (1992) Retailers can use slotting allowances to screen out low-demand from high-demand manufacturers because only manufacturers confident of generating enough demand to recover the initial fixed cost of slotting allowances will accept them.
- Rao and McLaughlin (1989) An empirical model of factors influencing new product adoption decisions by grocery buyers finds that slotting fees are not related to adoption decisions.
- When advertising effectiveness is sufficiently low, screening with slotting allowances affords higher total channel profits and higher social welfare than does signaling with advertising and wholesale price.
- Shaffer (1991) Slotting allowances may have anticompetitive effects that can raise retailer prices and profits.
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Marketing Literature Review

MYRON LEONARD, Editor
Western Carolina University

This section is based on a selection of article abstracts from a comprehensive business literature database. Marketing-related abstracts from over 125 journals (both academic and trade) are reviewed by JM staff. Descriptors for each entry are assigned by JM staff. Each issue of this section represents three months of entries into the database. JM thanks UMI for use of the ABI/INFORM business database.

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1. THE MARKETING ENVIRONMENT

1.1 Consumer Behavior

See also 28, 60, 61, 62, 86, 89, 99, 103, 111, 112, 116, 120, 123, 125, 126, 151, 158, 163, 164, 171, 177, 178, 182, 183, 200, 201, 202, 205, 206, 225

Meet the Inner-City Shopper. Marcia Mogelonsky, *American Demographics*, 20 (December 1998), pp. 38–41. [Survey, Underserved market segments, Minorities, Demographic characteristics, Expenditures, Retailers, Market strategy, Apparel stores, Brand names, Salespeople, Statistical data.] 1

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1.2 Legal, Political and Economic Issues

See also 25, 30, 124

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1.3 Ethics and Social Responsibility

See also 22, 116, 124, 133, 138, 146, 147, 148

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Model presentation, Hypotheses, Survey, Impacts, Pricing and distribution, Information and contract, Product and promotion, Obligation and disclosure, Honesty and integrity, Teleological evaluations, Impacts, Organizational and professional environments.] 26

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How and When Factual Ad Claims Mislead Consumers: Examining the Deceptive Consequences of Copy x Copy Interactions for Partial Comparative Advertisements. Michael J. Barone and Paul W. Miniard, *Journal of Marketing Research*, 36 (February 1999), pp. 58–74. [Literature review, Hypotheses, Three studies, Alternative process, Attribute characteristics, Belief measures, Brand uses, Statistical analysis, Implications.] 28

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2. MARKETING FUNCTIONS

2.1 Management, Planning, and Strategy

See also 24, 25, 26, 29, 63, 64, 68, 69, 70, 71, 74, 75, 81, 84, 91, 94, 95, 96, 97, 98, 100, 101, 104, 105, 106, 107, 108, 110, 118, 119, 123, 129, 135, 140, 141, 142, 143, 146, 150, 151, 152, 153, 154, 156, 158, 159, 162, 166, 167, 168, 173, 174, 180, 185, 187, 189, 191, 192, 193, 194, 195, 197, 203, 209, 213, 214, 216, 228, 229, 231, 232, 233, 236

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New Media in Marketing Redefine Competitive Advantage: A Comparison of Small and Large Firms. Gary S. Lynn, Alan C. Maltz, Peter M. Jurkat, and Michael D. Hammer, *Journal of Services Marketing*, 13 (No. 1, 1999), pp. 9–20. [Literature review, Survey, Use of Web technologies, Internal services, Effectiveness, Statistical analysis, Recommendations.] 128

2.9 Personal Selling

See also 29, 58, 61, 136, 137, 138, 161, 165, 218

The Role of Emotional Exhaustion in Sales Force Attitude and Behavior Relationships. Emin Babakus, David W. Cravens, Mark Johnston, and William C. Moncrief, *Journal of the Academy of Marketing Science*, 27 (Winter 1999), pp. 58–70. [Literature review, Model presentation, Hypotheses, Survey of salespeople, Measures, Role ambiguity, Role conflict, Emotional exhaustion, Job satisfaction, Organizational commitment, Performance, Intention to leave, Interactions, Statistical analysis, Implications.] 129

Personal Selling and Sales Management: A Relationship Marketing Perspective. Barton A. Weitz and Kevin D. Bradford, *Journal of the Academy of Marketing Science*, 27 (Spring 1999), pp. 241–54. [Literature review; Changing roles, Partnering; Conflict management; Situational moderators; Knowledge, skills, and abilities needed; Rewarding salespeople and sales teams; Assessment.] 130

Active Empathetic Listening and Selling Success: A Conceptual Framework. Lucette B. Comer and Tanya Drollinger, *Journal of Personal Selling and Sales Management*, 19 (Winter 1999), pp. 15–29. [Literature review, Dimensions (sensing, processing, responding), Theoretical models, Propositions, Transactional and posttransactional phases, Assessment, Implications for sales management.] 131

Applying Learned Optimism to Increase Sales Productivity. Peter Schulman, *Journal of Personal Selling and Sales Management*, 19 (Winter 1999), pp. 31–37. [Theoretical discussion, Learned helplessness, Cognitive psychology, Expectations, Benefits and applications, Change, Flexible optimism, Assessment, Recommendations.] 132

The Impact of Sales Quotas on Moral Judgment in the Financial Services Industry. Charles H. Schwepker Jr. and David J. Good, *Journal of Services Marketing*, 13 (No. 1, 1999), pp. 38–58. [Literature review, Hypotheses, Survey of salespeople, Effects, Ethical climate, Consequences for not making quota, Market attractiveness, Self-efficacy, Statistical analysis, Managerial implications.] 133

Wanted: More Newspaper Ads. Fredrik Gren, Jay Fogarty, and Luis Ubinas, *McKinsey Quarterly*, (No. 1, 1999), pp. 78–87. [Discussion, Salespeople, Teams, Support services, Strategies and tactics, Customer requirements, Performance measures, Market segments, Case study.] 134

2.10 Sales Management

See also 46, 57, 71, 130, 131, 134, 161, 165, 170, 219

Sales Managers: Marketing's Best Example of the Peter Principle? Rolph E. Anderson, Alan J. Dubinsky, and Rajiv Mehta, *Business Horizons*, 42 (January/February 1999), pp. 19–26. [Literature review, Perspectives (salespeople, customers, sales managers, top management), Selection of sales managers, Training, Evaluation, Integration with marketing, Assessment, Managerial implications.] 135

Salespeople and Senior Management: Not a "Match Made in Heaven." Jeffrey K. Sager, *Journal of Personal Selling and Sales Management*, 19 (Winter 1999), pp. 63–66. [Discussion, Problems, Boundary-spanning role, Bottom-line focus, Time horizon, Opinion of sales personnel, Focal perspective, Changes in sales force composition, Managerial implications.] 136

Sales and Marketing Management, 151 (March 1999), pp. 33–68. [Five articles on information technology, Marketing and sales force automation, Advantages, Disadvantages, Employee involvement, Attitudes, Training, Customer service, Examples.] 137

Political Animals. Sarah Lorge, *Sales and Marketing Management*, 151 (February 1999), pp. 50–55. [Office politics, Management styles, Impacts, Salespeople, Breakdowns in communication, No clear standards, Rules, Competition, Examples.] 138

Getting Schooled in Outsourcing. Erika Rasmusson, *Sales and Marketing Management*, 151 (January 1999), pp. 48–53. [Discussion, Sales training, Comparisons, In-house programs, Results, Examples.] 139

3. SPECIAL MARKETING APPLICATIONS

3.1 Industrial

See also 49, 50, 52, 53, 70, 73, 78, 81, 82, 107, 108, 168

Accelerating the Process of Engineering Change Orders: Capacity and Congestion Effects. Christoph H. Loch and Christian Terwiesch, *Journal of Product Innovation Management*, 16 (March 1999), pp. 145–59. [Analytical framework, Ratio between theoretical processing time and actual lead time, Impacts, Scarce capacity, Processing variability, Guidelines, Case study.] 140

Managing the Process of Engineering Change Orders: The Case of the Climate Control System in Automobile Development. Christian Terwiesch and Christoph H. Loch, *Journal of Product Innovation Management*, 16 (March 1999), pp. 160–72. [Literature review, Contributors to long lead times (complex approval process, snowballing changes, scarce capacity and congestion, setups and batching, organizational issues), Improvement strategies, Case observations.] 141

Manufacturing Strategies of Network-Based Small Firms: Observations on the Textile Industry in Taiwan. Wen-Hsien Chen, *Journal of Small Business Management*, 37 (April 1999), pp. 46–62. [Literature review, Survey, Strategy dimensions (capacity, facilities, technology, process span, human resources, organization, performance measurement), Competitive priorities (flexibility, delivery, cost, quality), Assessment, Managerial implications.] 142

Modeling and Worker Motivation in JIT Production Systems. Kenneth L. Schultz, David C. Juran, John W. Boudreau, John O. McClain, and L. Joseph Thomas, *Management Science*, 44 (Part 1, December 1998), pp. 1595–1607. [Literature review, Hypotheses, Laboratory experiment, Serial production lines, Independence assumption, Job design, Statistical analysis, Implications.] 143

JIT Manufacturing: A Survey of Implementations in Small and Large U.S. Manufacturers. Richard E. White, John N. Pearson, and Jeffrey R. Wilson, *Management Science*, 45 (January 1999), pp. 1–15. [Literature review, Hypotheses, Logistic regression models, Practices, Changes in performance, Large manufacturers were shown to be more advanced in implementation of JIT systems than were small manufacturers.] 144

Raising the Bar. Anne Millen Porter, *Purchasing*, 126 (January 14, 1999), pp. 44–50. [Survey of purchasing professionals, Supply-chain management, Quantitative performance measures, Effectiveness, Communication with suppliers, Resource deployment, Training, Automation, Quality, Best practices, Examples.] 145

3.2 Nonprofit, Political, and Social Causes

See also 22, 177, 194

The New Landscape for Nonprofits. William P. Ryan, *Harvard Business Review*, 77 (January/February 1999), pp. 127–36. [Discussion, Marketplace changes, Social services, Factors (size, capital, mobility, responsiveness), Competition, Comparisons, For-profits, Projections.] 146

Television Station Acceptance of AIDS Prevention PSAs and Condom Advertisements. Avery M. Abernethy and Jan LeBlanc Wicks, *Journal of Advertising Research*, 38 (September/October 1998), pp. 53–62. [Literature review; Hypotheses; Survey; Comparisons with 1990 radio results; Perceptions of duties, personal ethics, and willingness to broadcast AIDS information; Statistical analysis; Implications.] 147

The Effectiveness of Negative Political Advertising: A Case Study. Brenda S. Sonner, *Journal of Advertising Research*, 38 (November/December 1998), pp. 37–42. [Negative advertisements generated a backlash against the sponsor when the target of the attack responded quickly and forcefully, but were very successful when the target did not directly respond to the charges.] 148

3.3 International and Comparative

See also 25, 27, 44, 50, 51, 53, 60, 62, 67, 71, 85, 98, 100, 119, 121, 124, 142, 173, 175, 191, 192, 193, 216, 234

Marketing Agricultural Products to China. Zhan G. Li and Diana E. Eadington, *Business Horizons*, 42 (March/April 1999), pp. 45–51. [Discussion, Problems, Competition, Regulations and politics, Culture and economy, Guidelines (monitoring, education, segmentation and adaptation, distribution and sales channels).] 149

Confucius in Mexico: Korean MNCs and the Maquiladoras. Yongsun Paik and J.H. Derick Sohn, *Business Horizons*, 41 (November/December 1998), pp. 25–33. [Discussion, Similarities and differences Work ethic, Emphasis on groups, Seniority-based system, Top-down decision making, Paternalism, Examples.] 150

Comparing Chinese and Western Cultural Roots: Why “East Is East and...” Jack Scarborough, *Business Horizons*, 41 (November/December 1998), pp. 15–24. [Discussion, Government, Cosmology, Religion, Ethical standards, Power distance, Collectivism, External locus of control, Uncertainty avoidance, Assessment, Managerial implications.] 151

From National Competitiveness to Bloc and Global Competitiveness. Dong-Sung Cho, *Competitiveness Review*, 8 (No. 1, 1998), pp. 11–23. [Literature review, Model presentation, Factors (physical, human, external), Domain (firm, industry, nation, bloc, globe), Category of roles (subject, environment, resource, mechanism), Examples.] 152

Competing with Giants: Survival Strategies for Local Companies in Emerging Markets. Niraj Dawar and Tony Frost, *Harvard Business Review*, 77 (March/April 1999), pp. 119–29. [Aligning assets with industry characteristics, Flexibility, Extending local

advantages abroad, Rethinking the business model, Niche marketing, Managing transitions, Examples.] 153

Short-Term Results: The Litmus Test for Success in China. Rick Yan, *Harvard Business Review*, 76 (September/October 1998), pp. 61–63, 66–67, 70, 72, 74–75. [Multinationals, Market strategy, Early movers, Growth opportunities, Local markets, Learning and adapting, Identifying and promoting, Examples.] 154

Ad Agencies’ Performance and Role in Providing Communication Services in Chile, Japan, and the United States. Tom Griffin, David McArthur, Toshio Yamaki, and Pedro Hidalgo, *Journal of Advertising Research*, 38 (September/October 1998), pp. 65–75. [Literature review, Survey, Performance criteria (creativity, understanding the business, strategy, cooperation, media, research, plans and products, top management), Sourcing services, Assessment.] 155

Establishing Marketing Relationships in the Advertising Agency Business: A Transitional Economy Case. Zlatko Jancic and Vesna Zabkar, *Journal of Advertising Research*, 38 (November/December 1998), pp. 27–36. [Literature review, Hypotheses, Survey, Client–agency dyads, Variables (time schedule, understands needs, creative personnel, marketing knowledge, attentiveness, etc.), Number of agencies cooperated with, Length of cooperation, Industry of client, Statistical analysis, Managerial implications, Slovenia.] 156

A Multi-country Comparison of the Drive for IMC. Philip J. Kitchen and Don E. Schultz, *Journal of Advertising Research*, 39 (January/February 1999), pp. 21–38. [Literature review, Five-country study of advertising agencies, Comparisons, Amount of time and budgets devoted to IMC for clients, Beliefs and considerations about programs, Perceived barriers, Changing role, Statistical analysis, Implications.] 157

Journal of Business Research, 44 (January 1999), pp. 5–66. [Six articles on service marketing and management: European contributions, Impacts of service strategies on consumer behavior, Differences in trade show visitors’ objectives, Internal marketing’s role in organizations based on transaction cost theory, Social linking value of services, Interactions between services customers, Customers’ level of arousal versus pleasantness–unpleasantness appraisals.] 158

Does Winning Mean the Same Thing Around the World? National Ideology and the Performance of Global Competitors. Jeffrey P. Katz, Steve Werner, and Lance Brouthers, *Journal of Business Research*, 44 (February 1999), pp. 115–26. [Literature review, Hypotheses, Survey of banks, Measures, Profitability, Capitalization, Growth, Size, Risk, Earnings distribution, Discriminant analysis, Managerial implications.] 159

A Note on Countertrade: Contractual Uncertainty and Transaction Governance in Emerging Economies. Chong Ju Choi, Soo Hee Lee, and Jai Boem Kim, *Journal of International Business Studies*, 30 (First Quarter 1999), pp. 189–202. [Literature review, Measurement and enforcement costs; Contracts, trusts, and hostages; Role of identity in economic exchange; Assessment.] 160

Salesperson Performance, Pay, and Job Satisfaction: Tests of a Model Using Data Collected in the United States and Japan. R. Bruce Money and John L. Graham, *Journal of International Business Studies*, 30 (First Quarter 1999), pp. 149–72. [Literature review, Hypotheses, Survey of sales managers, Measures, Education, Seniority, Valence for pay, Value congruence, Performance, Pay, Satisfaction, Statistical analysis, Managerial implications.] 161

The Impact of Order and Mode of Market Entry on Profitability and Market Share. Yigang Pan, Shaomin Li, and David K. Tse, *Journal of International Business Studies*, 30 (First Quarter 1999), pp. 81–104. [Literature review, Hypotheses, Survey of firms, Early entrants have significantly higher market shares and profitability than late followers, Effects, Efficiency, Size, Equity joint ventures, China.] 162

A Cross-National Investigation into the Individual and National Cultural Antecedents of Consumer Innovativeness. Jan-Benedict E.M. Steenkamp, Frenkel Ter Hofstede, and Michel Wedel, *Journal of Marketing*, 63 (April 1999), pp. 55–69. [Literature review, Conceptual framework, Hypotheses, Consumer survey, Impacts, Consumer innovativeness, Personal values, Consumer ethnocentrism, Attitude toward the past, Sociodemographic covariates, National cultural variables, Statistical analysis, Managerial implications, European Union.] 163

International Market Segmentation Based on Consumer-Product Relations. Frenkel Ter Hofstede, Jan-Benedict E.M. Steenkamp, and Michel Wedel, *Journal of Marketing Research*, 36 (February 1999), pp. 1–17. [Means-end chain theory; Model development and application; Survey of households; Monte Carlo study; Four international segments were identified and found to be related to consumer sociodemographics, consumption patterns, media consumption, and personality.] 164

A Cross National Example of Supervisory Management Practices in the Sales Force. Thomas E. DeCarlo, Raymond C. Rody, and James E. DeCarlo, *Journal of Personal Selling and Sales Management*, 19 (Winter 1999), pp. 1–14. [Literature review, Hypotheses, Survey of sales managers, Measures, Comparisons, Salesperson perceptual congruence, Effort, Job satisfaction, Statistical analysis, Managerial implications, U.S., Australia.] 165

Management Practices Influencing New Product Success and Failure in the United States and Scandinavia: A Cross-Cultural Comparative Study. *Journal of Product Innovation Management*, 16 (March 1999), pp. 183–203. [Literature review; Survey to measure antecedents, market familiarity, and workplace environments characterizing selected products; U.S. systems were product-market oriented, task focused, and project management driven; Scandinavian systems were product-service oriented, driven by enduring interpersonal relationships, and socially oriented to helping others.] 166

Female Business Owners in Singapore and Elsewhere: A Review of Studies. Ramin Cooper Maysami and Valerie Priscilla Goby, *Journal of Small Business Management*, 37 (April 1999), pp. 96–105. [Personal and business profiles, Motivations, Major problems, Success factors, Assessment.] 167

Interfunctional Conflict, Conflict Resolution Styles, and New Product Success: A Four-Culture Comparison. Jinhong Xie, X. Michael Song, and Anne Stringfellow, *Management Science*, 44 (Part 2, December 1998), pp. S192–S206. [Literature review, Model presentation, Hypotheses, Survey of marketing managers, Interaction effects, Positive, Negative, Marketing, R&D, Manufacturing, Statistical analysis, Theoretical and managerial implications, Japan, Hong Kong, U.S., U.K.] 168

Global Beer: What's on Tap? Richard Benson-Armer, Joshua Leibowitz, and Deepak Ramachandran, *McKinsey Quarterly*, (No. 1, 1999), pp. 110–21. [Trends, Market shares, Market potentials, Beer consumption and affluence, Geographic regions, Homogeneous preferences, Intangible scale, Specialization, Statistical data.] 169

Smooth Selling in South Africa. Mackenzie Warren, *Sales and Marketing Management*, 151 (January 1999), pp. 20, 22. [Emerging markets; Entrepreneurs; Economic, political, and cultural aspects, Customer service, Case study.] 170

3.4 Services

See also 15, 16, 20, 40, 52, 93, 111, 127, 128, 133, 137, 155, 156, 158, 159, 202, 210, 219

Deconstructing the Debt Head. Charles Fishman, *American Demographics*, 20 (December 1998), pp. 60–65. [Financial services, Problems, Delinquent credit card customers, Data collection, Grit Index (wherewithal to pay bills), Personality characteristics, Examples.] 171

Cyberservice: Taming Service Marketing Problems with the World Wide Web. Leyland Pitt, Pierre Berthon, and Richard T. Watson, *Business Horizons*, 42 (January/February 1999), pp. 11–18. [Discussion; Mass customization; Managing intangibility, simultaneity, heterogeneity, and perishability; Examples.] 172

Journal of Brand Management (UK), 6 (March 1999), pp. 225–69. [Six articles on branding financial services, Impacts, Information technology, Internal control, Customer needs, Brand positioning, Communication, Competitive differentiation, Customer relations, Examples, U.K.] 173

Credit Cards at the Crossroads. Paul Hawkes and Danielle Harrison, *Journal of Brand Management (UK)*, 6 (November 1998), pp. 91–98. [Trends, Business growth, Competition, Card volume, Value, Consumer attitudes, Important card features, Markets (premium, niche, impaired, utility), Assessment, Success, Guidelines.] 174

Branding and Relationships Issues in Affinity and Co-branded Credit Cards. Steve Worthington, *Journal of Brand Management (UK)*, 6 (January 1999), pp. 188–97. [Comparative analysis, Number of MasterCard and VISA cards in issue, Turnover, Income generated, Participants (partner group, cardholder, card issuer), Projections, U.K.] 175

Competition Among Broadcast-Related Web Sites. Vincent Kiernan and Mark R. Levy, *Journal of Broadcasting and Electronic Media*, 43 (Spring 1999), pp. 271–79. [Content analysis of Web sites sponsored by commercial television stations, Variables, Network affiliation, Station income, Market rank, Broadcast competition, Web competition, Statistical analysis.] 176

Journal of Business Research, 44 (March 1999), pp. 137–229. [Six articles on tourism and quality-of-life issues, Competitive advantage, Societal prosperity, Customer satisfaction, Marketing of casino gaming, Community characteristics, Travel costs, Airline price wars, Vacation time availability, Cultural tourism, Relocation decisions.] 177

Shopping with Other People's Money: The Marketing Management Implications of Surrogate-Mediated Consumer Decision Making. Stanley C. Hollander and Kathleen M. Rassuli, *Journal of Marketing*, 63 (April 1999), pp. 102–18. [Literature review, Model presentation, Characteristics of specific surrogate businesses, Aspects of decision making, Functions and responsibilities, Social benefits and costs, Assessment.] 178

The Dark Side of Long-Term Relationships in Marketing Services. Kent Grayson and Tim Ambler, *Journal of Marketing Research*, 36 (February 1999), pp. 132–41. [Literature review, Hypotheses, Relationships between advertising agencies and their clients, Study replication (trust, involvement, interaction, commitment), Extension (length of relationship, rising expectations, opportunism/loss of objectivity), Statistical analysis.] 179

Antecedents to Client Satisfaction in Business Services. Linda I. Nowak and Judith H. Washburn, *Journal of Services Marketing*, 12 (No. 6, 1998), pp. 441–52. [Literature review, Survey of marketing executives, Research priorities, Factors, Product quality, Time/cost, Service quality, Statistical analysis, Managerial implications.] 180

Determinants of Service Quality and Satisfaction in the Auto Casualty Claims Process. Maria Royne Stafford, Thomas F. Stafford, and Brenda P. Wells, *Journal of Services Marketing*, 12 (No. 6, 1998), pp. 426–40. [Literature review, Consumer survey, Variables (tangibles, reliability, responsiveness, assurance, empathy), Statistical analysis, SERVQUAL.] 181

Improving Service by Informing Customers About Anticipated Delays. Ward Whitt, *Management Science*, 45 (February 1999), pp. 192–207. [Discussion, Birth-and-death models, Telephone call centers, Balking, Reneging, Abandonments, Retrials, Numerical examples.] 182

The Move Toward Primary Care. Michael Clugston and Brent Wren, *Marketing Health Services*, 18 (Winter 1998), pp. 19–27. [Discussion, Health care environment, OB/GYN women's health clinic, Survey of clients, Primary care utilization, Single mothers, Those who have personal physicians, Frequent users of current services, Statistical analysis.] 183

The Value Marketing Chain in Health Care. Scott MacStravic, *Marketing Health Services*, 19 (Spring 1999), pp. 15–19. [Discussion, Factors, Identifying the value, Communication, Delivery, Track the value delivered, Reminding customers of value, Evaluation.] 184

Managing Stakeholder Loyalty. R. Eric Reidenbach and Gordon W. McClung, *Marketing Health Services*, 19 (Spring 1999), pp. 21–29. [Data collection (patients, members, physicians, employee benefit managers), Retention factors, Peace of mind, Access to information and care, Price, Utility management, Credentialing, Communication, Partnership, Responsiveness, Statistical analysis, Managerial implications.] 185

The Role of Service Recovery in HMO Satisfaction. Dan Sarel and Howard Marmorstein, *Marketing Health Services*, 19 (Spring 1999), pp. 7–12. [Survey of health plan members, Factors, Medical outcomes, Complaint resolution, Referral problems, Ease of choosing a primary care provider (PCP), Found trusted PCP, PCP staff courtesy, Office wait time, Relations between complaint resolutions and switching intentions, Statistical analysis, Managerial implications.] 186

Hospital Marketing and the Internet: Revisited. C. David Shepherd and Daniel Fell, *Marketing Health Services*, 18 (Winter 1998), pp. 44–47. [Study replication, Internet utilization and activities, Barriers, Target audiences, Expected importance, Assessment.] 187

How Physician Networks Are Selling Themselves. David Volz, *Marketing Health Services*, 19 (Spring 1999), pp. 30–31, 33. [Niche marketing, Loss of professional autonomy and financial compensation to managed care, Market strategy, Deep discounting, Medical savings accounts, Examples.] 188

Managing Physicians. David Volz, *Marketing Health Services*, 18 (Winter 1998), pp. 29–31. [Discussion, Competition, Impacts, Physician management companies, Teams, Advantages, Examples.] 189

Developing a Hospital Web Site as a Marketing Tool: A Case Study. Thomas G. Widmer and C. David Shepherd, *Marketing Health Services*, 19 (Spring 1999), pp. 32–33. [Multidisciplinary teams, Objectives, Target markets, Categories of information, Promotional methods, Effectiveness, Assessment.] 190

McKinsey Quarterly, (No. 4, 1998), pp. 6–31. [Two articles on telecommunications, Internet access (wireless, fixed, and satellite networks), Broadband, Customer relationships, Competition, Market segments, Market development, International, Examples.] 191

World Power and Light. Peter Crawford, Kristin Johnsen, James Robb, and Peter Sidebottom, *McKinsey Quarterly*, (No. 1, 1999),

pp. 122–32. [Discussion, Market potentials, Drivers (industry restructuring, need for capital, importance of scale, management arbitrage), Strategies (specialization, geographic integration), Examples.] 192

What's in the Cards? Vijay D'Silva, Asheet Mehta, and John Stephenson, *McKinsey Quarterly*, (No. 4, 1998), pp. 90–97. [Credit cards, Profitability, Competition, Industry consolidation, Structure of transactions and flows (customers, business, government), Market potentials, International, Examples.] 193

4. MARKETING RESEARCH

4.1 Theory and Philosophy of Science

See also 3, 11, 13, 54, 76, 77, 88, 89, 92, 93, 110, 112, 131, 132, 140, 143, 182

The Strategic Imperative and Sustainable Competitive Advantage: Public Policy Implications of Resource-Advantage Theory. Shelby D. Hunt, *Journal of the Academy of Marketing Science*, 27 (Spring 1999), pp. 144–59. [Literature review, Comparisons, Neoclassical perfect competition, Structure of resource-advantage theory, Strategy and competition, Tests for competitiveness, Social welfare aspects.] 194

Multinomial Logit Market Share Models: Equilibrium Characteristics and Strategic Implications. Suman Basuroy and Dung Nguyen, *Management Science*, 44 (October 1998), pp. 1396–1408. [Literature review, Propositions, Linear price and marketing response functions, Entry and market expansion, Free-entry equilibrium, Assessment.] 195

Logit Demand Estimation Under Competitive Pricing Behavior: An Equilibrium Framework. David Besanko, Sachin Gupta, and Dipak Jain, *Management Science*, 44 (Part I, November 1998), pp. 1533–47. [Literature review, Data collection (ACNielsen), Value creation, Endogeneity, Brand names, Theoretical propositions, Statistical analysis.] 196

Echelon Reorder Points, Installation Recorder Points, and the Value of Centralized Demand Information. Fangruo Chen, *Management Science*, 44 (Part 2, December 1998), pp. S221–S234. [Literature review, Computational study, Mathematical equations, Supply-chain management, Stochastic demand, Batch ordering, Electronic data interchange, Algorithms, System parameters, Numerical examples.] 197

Stalking Information: Bayesian Inventory Management with Unobserved Lost Sales. Martin A. Lariviere and Evan L. Porteus, *Management Science*, 45 (March 1999), pp. 346–63. [Model formulation, Theorems, Dropping products, Bayesian dynamic programming, News vendor distributions, Dimensionality reduction, Product profitability, Multiple markets, Favoring small markets, Assessment.] 198

New Firm Survival: Institutional Explanations for New Franchisor Mortality. Scott Shane and Maw-Der Foo, *Management Science*, 45 (February 1999), pp. 142–59. [Business format franchising, Hypotheses, Data collection (Entrepreneur Magazine), Operationalization Controls (institutional, economic, and ecological theories), Statistical analysis, Implications for practitioners.] 199

4.2 Research Methodology

See also 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 28, 30, 42, 43, 45, 47, 59, 60, 62, 68, 88, 89, 94, 98, 102, 103, 107, 109, 113, 114, 116, 117, 120, 121, 122, 125, 126, 147, 155, 157, 163, 164, 171, 177, 178, 179, 181, 217, 221, 227, 228

American Demographics, 21 (January 1999), pp. 53–72. [Three articles on lives in the past and future, Retirement, States, Immigration, Boomer consumers, Religion, Income, Homemakers, Free

time, Home offices, Time and convenience, Entertainment, Individualism, Statistical data.] 200

You Talkin' to Me? Jeff Brazil, *American Demographics*, 20 (December 1998), pp. 54–59. [Trends, Grandparents, Shopping behavior, Expenditures, Marketers' failure to take advantage of this market, Misperceptions, Market segments, Statistical data.] 201

The Young and the Uninsured. Alison Stein Wellner, *American Demographics*, 21 (February 1999), pp. 72–77. [Trends, Generation Y, Health care expenditures, Injury rates, Insurers, Market strategy, Program designs, Statistical data.] 202

Marketers Take Action on Phaseout of SIC Codes. Laurie Freeman, *Business Marketing*, 84 (February 1999), pp. 1, 30. [Discussion, Transition, North American Industry Classification System (NAICS), New sectors, Ability to target marketing efforts better.] 203

Sampling in the Twenty-First Century. Seymour Sudman and Edward Blair, *Journal of the Academy of Marketing Science*, 27 (Spring 1999), pp. 269–77. [Discussion, Door-to-door sampling, Telephone and mail surveys, Location samples, Focus groups, Rare populations, Business surveys, Panels, Theoretical foundations of survey sampling, Evolutionary process and future developments.] 204

Q Is Accounting for Tastes. Marten Brouwer, *Journal of Advertising Research*, 39 (March/April 1999), pp. 35–39. [Discussion, Q methodology, Cases (intrapersonal, interpersonal, hybrid, collective), Assessment.] 205

Emotional Response to Television Commercials: Facial EMG vs. Self-Report. Richard L. Hazlett and Sasha Yassky Hazlett, *Journal of Advertising Research*, 39 (March/April 1999), pp. 7–23. [Literature review, Hypotheses, Experiment, Selected commercials, Facial EMG measures were a more sensitive discriminator between commercials and were more strongly related to measures of recall than were self-report measures.] 206

Have Laboratory Experiments Become Detached from Advertiser Goals? A Meta-Analysis. Edward F. McQuarrie, *Journal of Advertising Research*, 38 (November/December 1998), pp. 15–25. [Literature review, Journals, Media comparisons, Reality factors (choice, embedded with nonfocal attention, measured after a delay, competitive message present, repeated exposure, familiar brand), Assessment, Recommendations.] 207

Forecasting New Products with Limited History: Nabisco's Experience. Shri Amrute, *Journal of Business Forecasting*, 17 (Fall 1998), pp. 7–11. [Discussion, Methods, Deal and nondeal weeks, Average forecast error, Seasonal and shipment based adjustments, Exponential smoothing, Implementation, Example.] 208

Weather as a Strategic Element in Demand Chain Planning. Chris Cawthorn, *Journal of Business Forecasting*, 17 (Fall 1998), pp. 18–21. [Discussion, Phases, Historical analysis, Assess missed opportunities, Create product demand forecast, Develop future planning strategy, Effects, Consumer reactions, Example.] 209

Forecasting Process at Cable and Wireless Bartel Limited. Gwenocia Chandler, *Journal of Business Forecasting*, 17 (Winter 1998–99), pp. 10–14. [Discussion, Forecast system levels (corporate strategy, departmental, marketing), Macro- and microforecast models, Judgmental input, Implementation and monitoring, Application, Barbados.] 210

Benchmarking Sales Forecasting Performance Measures. Kenneth B. Kahn, *Journal of Business Forecasting*, 17 (Winter 1998–99), pp. 19–23. [Survey of forecasting managers, Forecast accuracy/error used, Comparisons, Companies using versus those

not using MAPE (Mean Absolute Percent Error), Statistical analysis.] 211

Synchronizing Supply Chain Operations with Consumer Demand Using Customer Data. Daniel A. Kiely, *Journal of Business Forecasting*, 17 (Winter 1998–99), pp. 3–9. [Discussion, Point-of-sale and alternative data streams, Customer forecasts, Consumer purchases, Customer warehouse withdrawals, Customer orders, Time phasing, Assessment.] 212

New Developments in Business Forecasting. Larry Lapide, *Journal of Business Forecasting*, 18 (Spring 1999), pp. 12–14. [Discussion; Application features; Scalability; Planning support; Software packages; General purpose modeling and statistical tools; Point solution forecast applications; Distribution, supply chain, and enterprise resource planning.] 213

Market Motives, Distinctive Capabilities, and Domestic Inertia: A Hybrid Model of Innovation Generation. Murali Chandrashekar, Raj Mehta, Rajesh Chandrashekar, and Rajdeep Grewal, *Journal of Marketing Research*, 36 (February 1999), pp. 95–112. [Literature review, Hypotheses, Data collection, Software packages, Model comparisons, Potential and realized competition, Interinnovation duration, Diffusion rates, Product bundling, Statistical analysis, Implications.] 214

Understanding How Product Attributes Influence Product Categorization: Development and Validation of Fuzzy Set-Based Measures of Gradedness in Product Categories. Madhubalan Viswanathan and Terry L. Childers, *Journal of Marketing Research*, 36 (February 1999), pp. 75–94. [Literature review, Conceptual framework, Hypotheses, Study, Attitude and family resemblance measures, Validity (convergent, nomological, discriminant), Category- and individual-level correlations, Applications for marketing decisions, Implications.] 215

The Impact of Marketing Research Activity on SME Export Performance: Evidence from the UK. Susan Hart and Nikolaos Tzokas, *Journal of Small Business Management*, 37 (April 1999), pp. 63–75. [Literature review, Conceptual framework, Survey, Information collection vehicles, Information elements collected, Managerial use, Relationships, Performance, Industry type, Company size, Statistical analysis, Managerial implications.] 216

5. OTHER TOPICS

5.1 Educational and Professional Issues

See also 24, 38, 69, 86, 167, 204, 207, 235

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See also 38, 220

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Herbert Jack Rotfeld

The Textbook Effect: Conventional Wisdom, Myth, and Error in Marketing

Textbooks and Research Journals

Conventional wisdom holds that marketing textbooks are based on established marketing concepts. Readers assume that the contents of these books reliably summarize research findings to provide foundational information for students. In what is assumed to be a virtuous and reciprocal relationship, knowledge is generated in research, published in journal articles, and then collected and summarized in textbooks. The process sometimes is reversed when journal articles appeal to textbooks for authority. However, the relationship between texts and research is not always virtuous. For example, in their study of marketing texts, Armstrong and Schultz (1993) collected 566 normative statements about pricing, communications, and product or distribution decisions that were not supported by empirical evidence. Nine of the statements were judged to be "nearly correct" when their wording was reversed!

In this review, I explore the ambivalent and often perverse relationship between knowledge generating (research) and knowledge disseminating (textbooks) activities in a process I call the "textbook effect." The textbook effect refers to (1) the embedding of old, defunct, unsubstantiated theories in textbooks and (2) the effect such embedding has on practice and research. Although my point is a general one, for the sake of illustration I take up a particular case of the impact of the textbook effect on the body of research referred to as "fear appeals."

The Case of Fear Appeals

Fear appeals have become a mainstay of the marketing literature. After many decades of research, it is interesting to

review how the textbooks report fear appeals issues and how these reports relate to what research is published in refereed journals.

Twenty-three general marketing, advertising, and consumer behavior textbooks, published in the last three years and having some coverage of fear appeals, were selected for review. Although the books varied in how much they said, they varied little in the substance of their reports (see Table 1). Few reported actual research on what works and why. Of those that did cite research, all reported a theory that has never been supported in the literature.

Most of the texts simply gave narrative descriptions or examples of types of threats that can be used to appeal to consumer fears. Some listed fear as a type of appeal, others cited studies showing the growing use of fear appeals, and a few referenced articles that list how readily fear appeals are used in certain areas. A handful, besides giving examples, also discussed the difference between social and physical fears.

Although the topic is called "fear appeals," more appropriately it should be called "appeals to audience fears." Textbooks do not so much discuss consumer fears as present descriptions and examples of types of threats that can be used in marketing communications. Threats are literal content that illustrate undesirable consequences from certain behaviors, such as car damage, injury, or death from unsafe driving or bad breath, illness, or cancer from cigarette smoking. Fear is a consumer's possible emotional response to threats. A threat is an appeal to fear, a communication stimulus that *attempts* to evoke a fear response by showing some type of outcome that the audience might want to avoid. Despite this important distinction, the textbooks tend to use the terms fear and threat interchangeably, discussing a type of threat as the "amount of fear" in a message.

Only five of the textbooks had detailed discussions about effects or effectiveness of appeals to fear. All five said the relationship between the amount of fear and persuasion is curvilinear (a few even showed a picture of the near-classic inverted-U). Under this view, increases in audience fear have an optimal level for persuasion, after which there is a drop-off in the likelihood that the audience will respond in the desired fashion. Two of these five authors also present a history of the evolution of fear appeal thought.

The problem with this dependence on the inverted-U hypothesis is that refereed published reviews of the literature and a meta-analysis of data have all shown that, despite the idiosyncratic nature of fear arousal responses to threats and the ad hoc nature of some research definitions and execu-

Herbert Jack Rotfeld is Professor of Marketing, Auburn University.

tions of fear appeals, the relationship between the emotional response of fear arousal and persuasion is not curvilinear but monotonic and positive. In general, the greater the actual fear engendered by a communication, the greater is the persuasion (Boster and Mongeau 1984; Rotfeld 1988; Sutton 1982, 1992).

A meta-analysis of 35 published studies on a wide range of topics, subjects, and communications vehicles concluded that "increases in fear are *consistently* associated with increases in acceptance [of the recommended action]" (Sutton 1982, p. 323). Some old psychobiology studies suggest that large amounts of subject fear have a negative impact if and

TABLE 1
A Guttman Scale of Textbooks' Coverage of Fear Appeals

	Description	Examples	Social Versus Physical	U-Shaped Response	Evolution
Batra, Myers, and Aaker (1995), <i>Advertising Management</i> , 5th ed. Upper Saddle River, NJ: Prentice Hall.	X	X			
Bearden, Ingram, and LaForge (1995), <i>Marketing: Principles and Perspectives</i> , 1st ed. Chicago: Richard D. Irwin.	X	X			
Bovee, Houston, and Thill (1995), <i>Marketing</i> , 2d ed. New York: McGraw-Hill.	X	X			
Bovee, Thill, Dovel, and Wood (1995), <i>Advertising Excellence</i> , 1st ed. New York: McGraw-Hill.	X	X			
Evans and Berman (1995), <i>Principles of Marketing</i> , 3d ed. Englewood Cliffs, NJ: Prentice Hall.	X	X			
Hoyer and MacInnis (1997), <i>Consumer Behavior</i> , 1st ed. Boston: Houghton Mifflin.	X	X			
Keegan, Moriarty, and Duncan (1995), <i>Marketing</i> , 2d ed. Englewood Cliffs, NJ: Prentice Hall.	X	X			
Kotler and Armstrong (1996), <i>Marketing: An Introduction</i> , 4th ed. Upper Saddle River, NJ: Prentice Hall.	X	X			
Lamb, Hair, and McDaniel (1996), <i>Marketing</i> , 3d ed. Cincinnati: South-Western College Publishing.	X	X			
Mowen and Minor (1997), <i>Consumer Behavior</i> , 5th ed. Upper Saddle River, NJ: Prentice Hall.	X	X			
Nickels and Wood (1997), <i>Marketing: Relationships, Quality, Value</i> , 1st ed. New York: Worth Publishers.	X	X			
Siegel, Carolyn F. (1996), <i>Marketing: Foundations and Applications</i> , 1st ed. Chicago: Richard D. Irwin.	X	X			
Solomon and Stuart (1997), <i>Marketing: Real People, Real Choices</i> , 1st ed. Upper Saddle River, NJ: Prentice Hall.	X	X			
Vanden Bergh and Katz (1999), <i>Advertising Principles</i> . Chicago: NTC Business Books.	X	X			
Burnett and Moriarty (1998), <i>Introduction to Marketing Communications</i> , 1st ed. Upper Saddle River, NJ: Prentice Hall.	X	X	X		
Lamb, Hair, and McDaniel (1998), <i>Marketing</i> , 4th ed. Cincinnati: South-Western College Publishing.	X	X	X		
O'Guinn, Allen, and Semenik (1998), <i>Advertising</i> , 1st ed. Cincinnati: South-Western College Publishing.	X	X	X		
Semenik and Bamossy (1995), <i>Principles of Marketing: A Global Perspective</i> , 2d ed. Cincinnati: South-Western College Publishing.	X	X	X		
Belch and Belch (1998), <i>Advertising and Promotion: An Integrated Marketing Communications Perspective</i> , 4th ed. Boston: Richard D. Irwin.	X	X	X	X	
Shimp, Terence A. (1997), <i>Advertising, Promotion, and Supplemental Aspects of Integrated Marketing Communications</i> , 4th ed. Orlando, FL: The Dryden Press.	X	X	X	X	
Solomon, Michael R. (1996), <i>Consumer Behavior: Buying, Having, and Being</i> , 3d ed. Englewood Cliffs, NJ: Prentice Hall.	X	X	X	X	
Berkman, Lindquist, and Sirgy (1996), <i>Consumer Behavior</i> , 1st ed. Chicago: NTC Business Books.	X	X	X	X	X
Tellis, Gerard J. (1998), <i>Advertising and Sales Promotion Strategy</i> , 1st ed. Reading, MA: Addison Wesley.	X	X	X	X	X

Notes: description = gave description of fear appeals, examples = gave examples of fear appeals, social versus physical = discussed social versus physical fears, U-shaped response = discussed U-shaped response, evolution = covered evolution of fear appeal thought.

only if the person's fear is so strong as to verge on the neurotic (e.g., Janis 1968; Leventhal 1967). However, there is a dearth of evidence that mass communications appeals can engender neurotic emotional responses, and no one has asserted that neurotic consumer behavior should be a strong focus of future advertising research or marketing strategy. Surprisingly, the discussion of how people resist strong fear messages and the repetition of the various curvilinear hypotheses remain quite common in marketing textbooks.

In those rare instances in which textbook authors note that the inverted-U has not stood up under scrutiny, they tend to explain that it still might be true despite problems with previous research findings. For example, one book, which cites a strong review of the literature that clearly illustrates how and why the inverted-U has failed to be supported by research data, then asserts a seemingly intuitive explanation by saying that the optimal level of fear might depend on the degree of relevance of a topic for the audience, somehow missing the point that topic relevance is an integral part of audience fear. If a subject is not relevant for an audience, they will not fear it.

How the textbooks locked onto this old and erroneous view of fear appeals goes back almost 50 years to the work of Janis and Feshbach (1953, 1954). In their studies, the appeals the researchers designated as weaker were more effective in persuading high school students to adopt the recommended tooth care procedures. In an almost offhand comment that attempted to explain the results, the authors speculated that an optimal level of fear for persuasion might exist. Two decades later, Duke's (1967) critique of Janis and Feshbach's studies complained that their findings had become overgeneralized in the literature. Although Janis and Feshbach dropped all discussion of the elusive optimal level of fear from later theoretical presentations, their original speculation was picked up in marketing textbooks.

Textbooks in any field can lock in old thinking to the detriment of future research. As Nobel Prize-winning economist George Stigler (1985, p. 112) observed, "Once an idea is widely accepted, it is guaranteed a measure of immortality." Similarly, naturalist Stephen J. Gould (1985, p. 384) has repeatedly pointed out how "[f]acts achieve an almost immortal status once they pass from primary documentation into secondary sources, ... errors are copied from generation to generation and seem to gain support by sheer repetition. No one goes back to discover the fragility of original arguments." Almost all basic sociology texts state that Margaret Mead found that the Tchambuli of New Guinea reversed sex roles, despite her repeated assertion from the time she published her work on the Tchambuli in 1935 until her death that she never made such a claim. In 1979, Goldberg (as reported in Goldberg 1996) pointed out this persistent error in a letter published in *Contemporary Sociology*, a publication of the American Sociological Association and read by virtually everyone publishing in mainstream sociology, only to review textbooks a decade later and find that the letter had no effect whatsoever.

In the same way, once the concept of an optimal level of fear for persuasion found its way into textbooks, many marketing researchers have repeated it and sought to validate it,

explain it, or simply use it as a starting point for their work (e.g., Keller and Block 1996; Strong and Dubas 1993).

Typically, research in marketing journals starts in one of two ways. On the one hand, it is claimed that some unknown optimal level of fear exists to maximize persuasion power. On the other hand, after dutifully listing a handful of studies, the conclusion is that prior research data are "mixed." In both cases, discussion locks onto speculation that an optimal level of fear for persuasion might exist. Despite the failure of every thorough literature review to show empirical support for the theory, the optimal level of fear concept seems to have been elevated to the position of disciplinary dogma—repeated, discussed, tested, and/or debunked as if it remains the prevailing successful theoretical explanation. One would think that if the data are repeatedly mixed after 45 years of research, the theory would be discarded as unsupported. Many studies look for ways to explain or support a theory that has never been supported in the first place. This is not altogether unlike the researchers who seek evidence of Bigfoot based on a priori conclusions that he exists (see Gould 1996).

Given the staying power of "levels of fear" and the inverted-U in marketing journals, the consistent repetition of this view in textbooks is not altogether surprising. Conversely, it could well have been the textbooks that led to the common view in journals. Which came first is not clear, but the current textbook presentations do not provide reviews of contemporary research literature. Their discussions often depend on articles written when Richard Nixon was president.

One study still frequently cited in textbooks (Ray and Wilkie 1970) attempts to defend and explain the inverted-U in the face of equivocal data. The article speculates that studies that found "high fear" most persuasive might have used communications that were equivalent in scare content to the "mild fear" messages found most persuasive in other studies. Similarly, researchers who found the strongest response to what they labeled high fear did not use scary enough material to realize that subjects would be less persuaded at higher fear levels. Back when this article was written, research in the area was in its infancy. The first critiques of the curvilinear theories had just started to come out in psychology journals (e.g., Higbee 1969), and marketing researchers were attempting to reconcile confusing and conflicting data (e.g., Spence and Moinpour 1972; Sternthal and Craig 1974; Wheatley 1971). However, this does not explain why these articles are still the theoretical linchpins of textbooks published in the past few years. Perhaps the fact that they were originally published in the still-prestigious *Journal of Marketing* or *Journal of Consumer Research* explains something.

But the plot thickens further. Some articles are cited by the textbooks as concluding things they did not say. For example, they referenced an article as supporting a curvilinear relationship, even though that article had a specific subhead stating "The Myth of the Inverted-U" (Rotfeld 1988). To a certain extent perhaps, the books simply repeat one another: New studies are patched into old discussions; new findings or theories are presented in a context of how they fit with prior and accepted textbook summaries. I certainly do not

want to single out specific textbooks for this misuse, because the practice is far from uncommon. However, one conclusion could be that the textbook writers' goals are not to review research accurately but to maximize the number of marketing faculty members who have at least one article listed in the references (Rotfeld 1999).

Explaining the Textbook Effect

The dogmatic retention of unsupported and outdated theories in textbooks, as well as the implicit endorsement and propagation of these in journal articles, is a problem. Textbooks seem to institutionalize theoretical approaches from previous years. One result of this is that many researchers also lock into the unsupported views and defend theories that have failed to establish any explanatory utility.

Yet textbook authors are not wholly to blame for the textbook effect. No textbook author or team I know of claims to be expert in all the areas general books are required to cover. As a potential remedy for this situation, most publishers send manuscript chapters out to reviewers for comments and corrections. Unfortunately, reviewers tend to be selected as possible major adopters, not because they are experts on the topics. Because of this process, authors wish to repeat the conventional wisdom.

Nevertheless, it is interesting to note how authors use and/or avoid the research literature. Consistent with Armstrong and Schultz's (1993) findings that the actual use of research seems limited, a general point is usually made, and a research article or two is cited to demonstrate how the issue under discussion is applied. General statements spring from single examples, and then the author moves on to another subject. In most cases, the cited research articles are not even related to the broader discussion. If actual research is used, it is often based on errors, myths, or attempts to defend the conventional wisdom.

The basic problem remains. Textbooks have institutionalized a theoretical approach from the earliest years of a field, and probably as a partial result, researchers also have locked into a pattern of trying to explain or support a perspective that has repeatedly been discredited. In many fields, textbooks take on an aura and power not unlike that of sacred texts. The mere presence of a collection of textbooks can provide legitimacy to a discipline or a specialized subfield (Ferrell 1998), even when those basic texts fail to be the compilations of journal research that most of us believe they should be. Some faculty members might try to criticize textbooks or not use them at all, but their numbers are few and they often report widespread student complaints of the practice.

Perhaps, at least in the case of fear appeals, the errors are about to be corrected. In the new fourth edition of his consumer behavior text published in fall 1998 (after the books for this study were gathered), Solomon (1999) cites recent journal articles and states,

Some of the research on fear appeals may be confusing a threat (the literal content of a message, such as saying "engage in safe sex or die") with fear (an emotional response to the message).... [G]reater fear does result in greater persuasion—but not all threats are equally effective because

different people will respond differently to the same threat. Therefore, the strongest threats are not always the most persuasive because they may not have the desired impact on the perceiver.

This change is encouraging! However, it is a single textbook and a single topic.

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A General Theory of Competition: Resources, Competences, Productivity, Economic Growth

by Shelby D. Hunt (Thousand Oaks, CA: Sage Publications, 2000, 303 pp., \$70.00 hardcover, \$29.95 paperback)

A General Theory of Competition: Resources, Competences, Productivity, Economic Growth is a welcome attempt to develop a more contemporary and realistic theory of competition. It comes at a time when there is growing unrest with the neoclassical theory of competition. This unrest arises from the increased recognition that the neoclassical assumptions of perfect information, homogeneity of buyers and sellers, maximization of firms' profits, and competitive equilibrium are not isomorphic with the competitive environment. In addition, the increased mathematical sophistication of the theory has virtually become, to many scholars, a goal in and of itself. Not surprisingly, therefore, many business practitioners and theoreticians (including some economists) have increasingly found neoclassical economic analysis largely useless. Consequently, there has been a push to develop richer, more useful theories of competition. In his *General Theory of Competition*, Hunt pulls together much of this new thinking and integrates it with his own theory of resource advantage to develop a lucid general theory of competition. Perhaps most important, Hunt draws a compelling picture of competition that is not a zero-sum game to divide up limited resources but a win-win game about creating more resources.

The explanatory richness of Hunt's general theory of competition stems in large measure from its basis in at least 11 different research traditions: Austrian economics, competence-based tradition (from strategic management), differential advantage theory, economic sociology, evolutionary economics, heterogeneous demand theory, the historical tradition, industrial organization economics, institutional economics, the resource-based tradition (again, from strategic management), and transaction cost economics. Hunt's general theory is indeed a truly interdisciplinary theory! In the book, he demonstrates how his theory can explain certain phenomena better than neoclassical economic theory can, because it uses more "descriptively realistic premises." Table I (taken from the book) compares and contrasts the foundational premises of perfect competition with the more "descriptively realistic premises" of Hunt's resource-advantage theory.

The book is clear, logical, and compelling and avoids unnecessary jargon or mathematical terminology, which makes it (I would suppose) accessible to a variety of readers. It would be unfortunate if the book were not read by a wide audience. Given its broad applicability, I would expect

the book to be of interest, at the very least, to scholars and students in economics, history, law, political science, business (especially marketing and strategy), management consulting, and public policy, as well as to executives and entrepreneurs.

Because of the unifying and integrative nature of Hunt's general theory of competition, it should be especially useful to educators, managers, and public policymakers. For example, business faculty members are increasingly pressured to integrate business topics to help students appreciate the complexities and systems nature of business. Increasingly, students are called on not only to understand and appreciate the fine points of accounting, economics, finance, law, management, and marketing but also to see how they interrelate. A workable general theory of competition, which truly reflects real-world competitive processes and dynamics, would provide a vehicle for such integration. Indeed, Hunt's general theory has the potential to awaken the business discipline to its various myopic views and provide a holistic view that compellingly demonstrates interrelationships among the business disciplines.

Accounting and finance students studying the general theory of competition will recognize that social capital and other resources (i.e., brand equity, channel equity, superior human resources, and the ability of the organization to learn) are missing from the financial statements. Understanding the nature and scope of intangible resources will give these students a more comprehensive understanding of a firm's value-creating resources. This frame of reference will help students understand why "book" and "accounting" values are often less than the market value of a firm. Finance students will see that sources of financial capital are influenced by relational and social capital. They will see that liquidity and financial slack in the firm are not independent of relational resources.

Students of economics will learn that economies are not static equilibrating systems but evolving, adapting living systems, in which management and marketing processes and entrepreneurial risk taking are important sources of economic growth.

Marketing students will begin to appreciate that customers are not the only things that matter to the firm. They will see that a firm's resources include relationships with other stakeholders and that these can also be important resources that provide competitive advantage to the firm. They will also understand that business success can be related to internal and nonobservable competences and not just to what is offered or directly exchanged with the customer. Students of strategic management will see strategy making in a new light, because Hunt insists on a disciplined, comprehensive, and thoughtfully integrative framework that insists on a broadened perspective.

Marketing managers and executives will find *A General Theory of Competition* useful in shaping their firms' strategic plans. In this vein, the theory shares much with the extant business strategy literature. For example, it provides an excellent framework for identifying pathways to superior financial performance.

Perhaps the book's most useful long-term benefit could be as a compelling, multifunctional integrative framework

TABLE 1
Foundational Premises of Perfect Competition and Resource-Advantage Theory

	Perfect Competition Theory	Resource-Advantage Theory
P1. Demand is:	heterogeneous across industries, homogeneous within industries, and static.	heterogeneous across industries, heterogeneous within industries, and dynamic.
P2. Consumer information is:	perfect and costless.	imperfect and costly.
P3. Human motivation is:	self-interest maximization.	constrained self-interest seeking.
P4. The firm's objective is:	profit maximization.	superior financial performance.
P5. The firm's information is:	perfect and costless.	imperfect and costly.
P6. The firm's resources are:	capital, labor, and land.	financial, physical, legal, human, organizational, informational, and relational.
P7. Resource characteristics are:	homogeneous and perfectly mobile.	heterogeneous and imperfectly mobile.
P8. The role of management is:	to determine quantity and implement production function.	to recognize, understand, create, select, implement, and modify strategies.
P9. Competitive dynamics are:	equilibrium-seeking, with innovation exogenous.	disequilibrium-provoking, with innovation endogenous.

Source: Hunt, Shelby D. and Robert M. Morgan (1997), "Resource-Advantage Theory: A Snake Swallowing Its Tail or a General Theory of Competition," *Journal of Marketing*, 61 (October), 74-82.

in MBA or capstone undergraduate courses. As such, it might teach business school graduates to think outside of the traditional silos from the start. If it achieves this, there is no telling what changes might follow. Because the firm must be concerned with its relative resource costs compared with its relative resource-produced value (its strategies must provide it at least with a parity, at best with a competitive advantage), Chapters 4 ("Antecedents and Affinities: Business Strategy and Institutional Theory") and 6 ("Resource-Advantage Theory: An Evolutionary, Process Theory of Competition") will prove most helpful for these readers.

Resource-advantage theory will also be of interest to the marketing executive because it shows that firm performance is determined not primarily by industry structure but by firm- and functional-level factors around which strategy can be developed. In this regard, the theory emphasizes not only the values marketers like to stress but also the costs on which controllers and accountants tend to focus. In short, the theory provides a highly integrative strategic planning tool.

For the public policymaker, the general theory underscores the importance of recognizing that the world of supply and demand is highly heterogeneous. Heterogeneity is the natural state of affairs. Moreover, Hunt argues that competition is not about structure but about processes and that competition is evolutionary. Public policymakers should read this book to learn how the processes of resource-advantage competition are prosociety. In particular, they will find Chapters 7 ("Productivity, Efficiency, and Effectiveness"), 8 ("Endogenous Economic Growth"), and 9 ("The Wealth of Nations") especially informative and enlightening in relation to the explanatory power of resource-

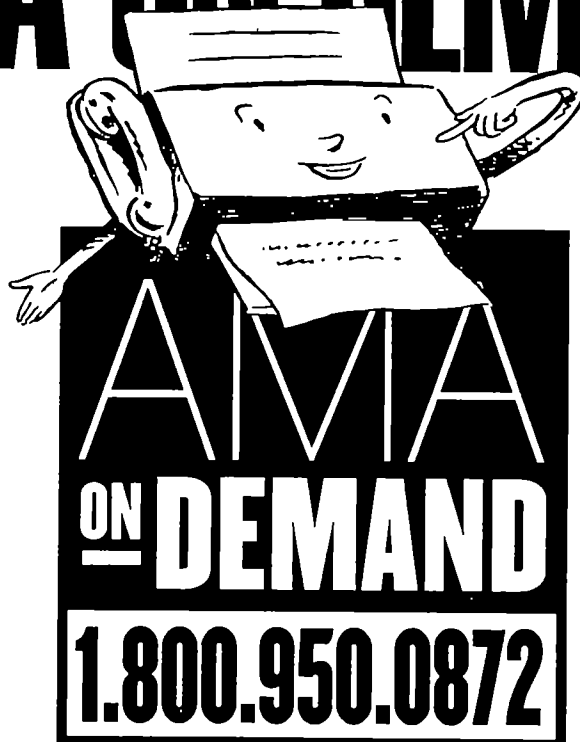
advantage theory and Hunt's general theory of competition. Public policy should support the battle for advantage, disequilibrium, and heterogeneity. Policy that embraces resource-advantage competition helps society allocate scarce tangible resources and create more tangible and intangible resources that will drive economic growth.

The theory has implications for lawmaking too. State and Federal judges will find the resource-advantage theory of competition highly informative and a useful tool in rendering the complex decisions involved in antitrust cases. On the other side of the bench, antitrust lawyers will find many of Hunt's well-constructed arguments helpful in developing their own analyses and arguments.

In summary, I found Hunt's book refreshing and enlightening. It masterfully pulls together many streams of literature I had been reading and studying. Perhaps more important, it helped me realize that competition is not about dividing up a finite amount of resources but about expanding those resources. Therefore, competition is prosociety. Competition is ultimately about doing more with less and thus increasing productivity and human welfare. In addition, competition for resource advantage stimulates learning and knowledge, which become the fountainhead of all resources. And now a new fountainhead of resources is at our disposal: Hunt's book is itself a wonderful intangible resource of infinite value as a road map for improving human welfare. Hunt's general theory is not a finite resource that must be divided so some have and others do not. On the contrary, it is an intangible resource that everyone can possess for the betterment of all humankind. Let's not allow this resource to lie dormant.

ROBERT F. LUSCH
University of Oklahoma

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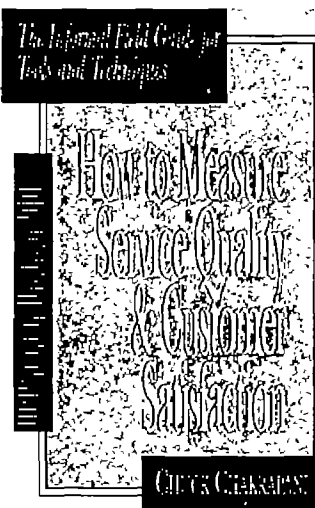


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